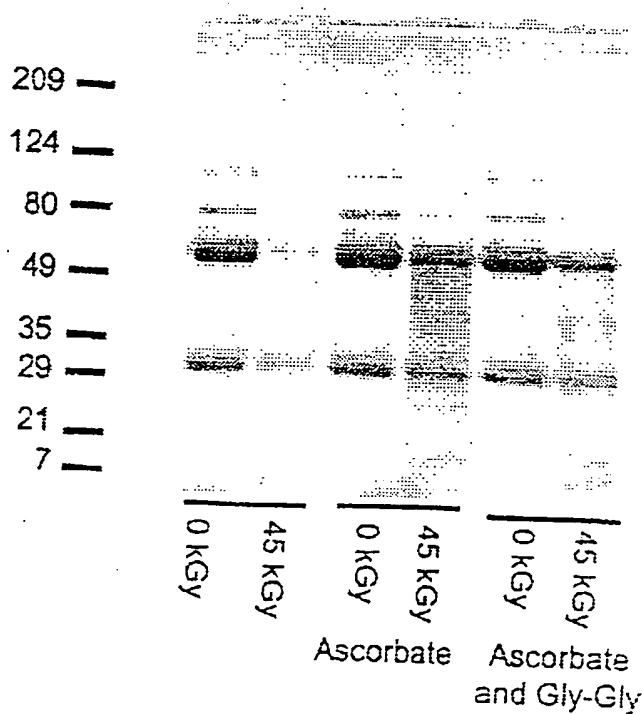


Fig 1A

Gamma Irradiation of Liquid IGIV in the Absence or Presence of Ascorbate Alone or in Addition to Gly-Gly

Liquid IGIV, Reduced 5-15%

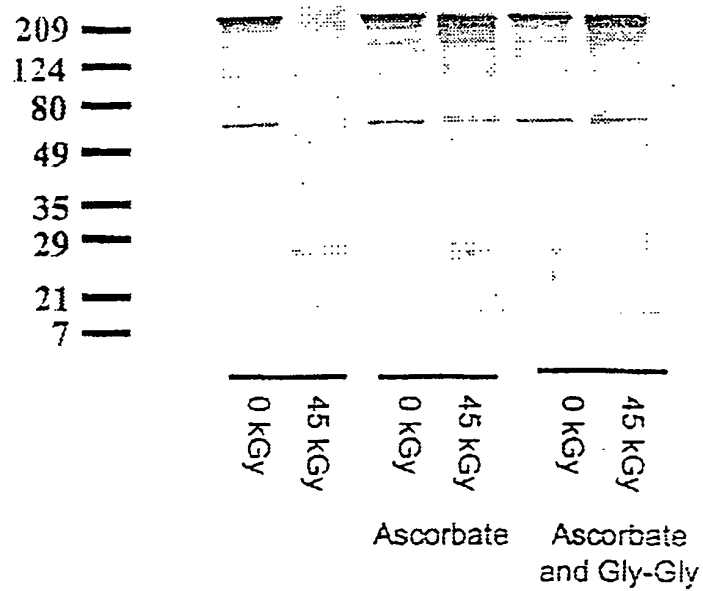


09973958-101101

Fig 1B

Gamma
Irradiation of Liquid IGIV in the Absence or Presence of
Ascorbate Alone or in Addition to Gly-Gly

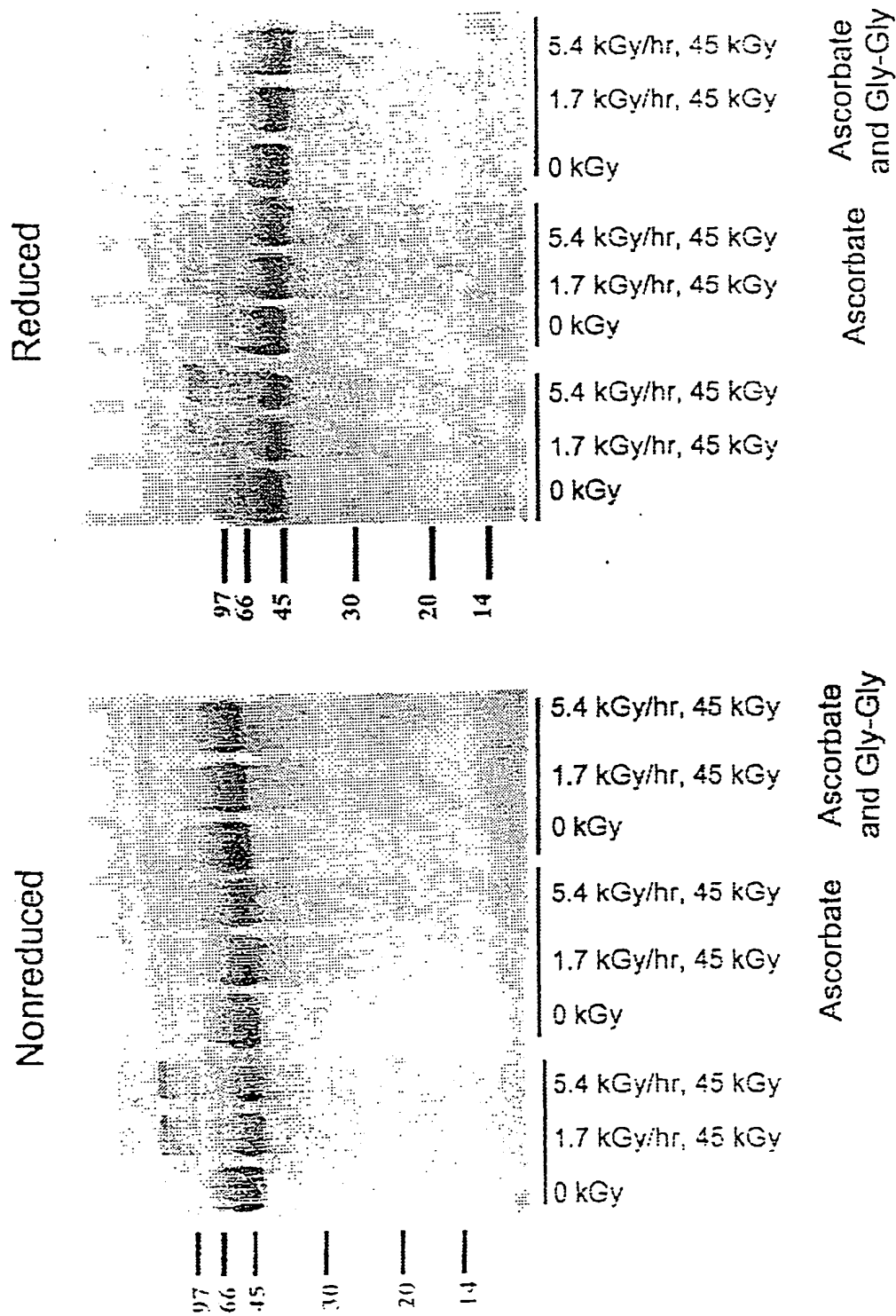
Liquid IGIV, Non-Reduced 5-15%



00073058-101101

Figure 2A

Gamma Irradiation of a Glycosidase In the Presence of Ascorbate and Gly-Gly



TOPTOT 856E2660
 Gamma Irradiation of a Sulfatase In the
 Presence of Ascorbate and Gly-Gly

Reduced

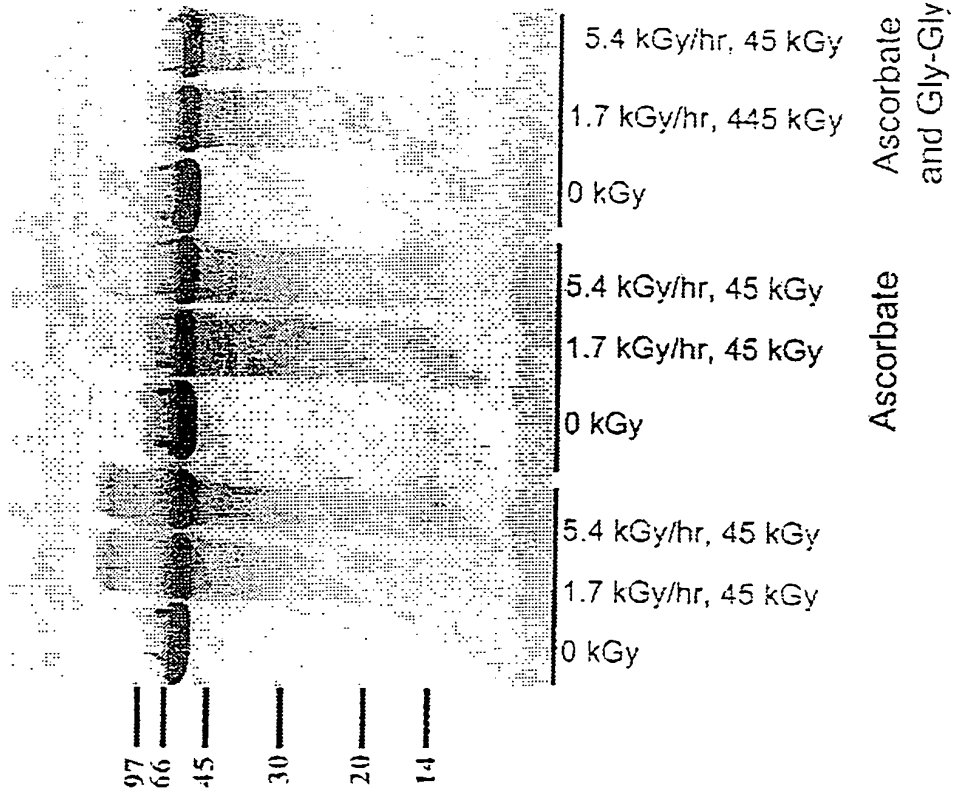
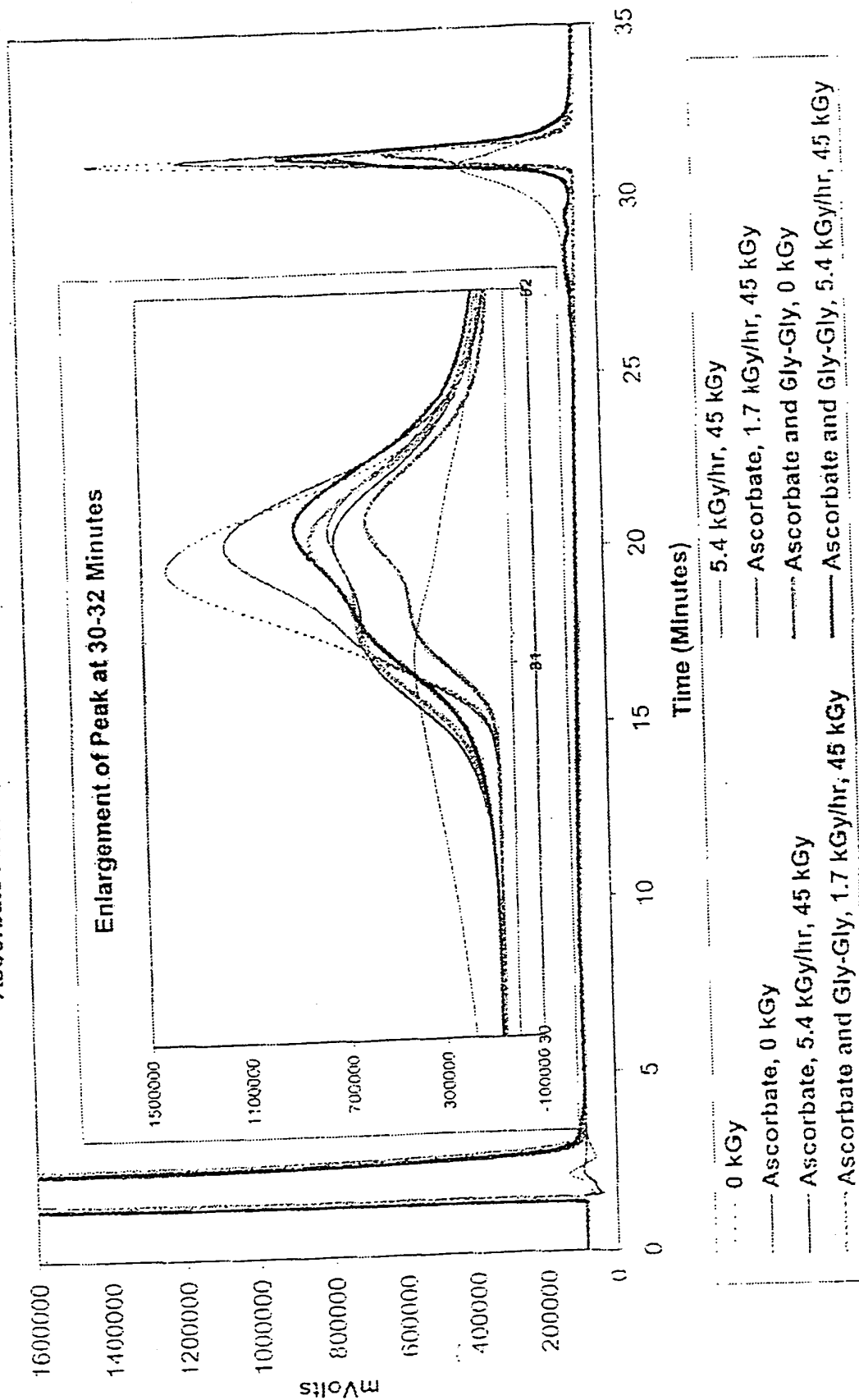


Figure 3

TOPOT-85624500

Gamma Irradiation of a Galactosidase In the Presence or Absence of Ascorbate Alone or In Combination with Gly-Gly



TOTOT 355E2660

Gamma Irradiation of Immobilized Anti-Insulin Monoclonal Antibody with Varying Ascorbate Concentrations in the Presence or Absence of 1.5mM Uric Acid

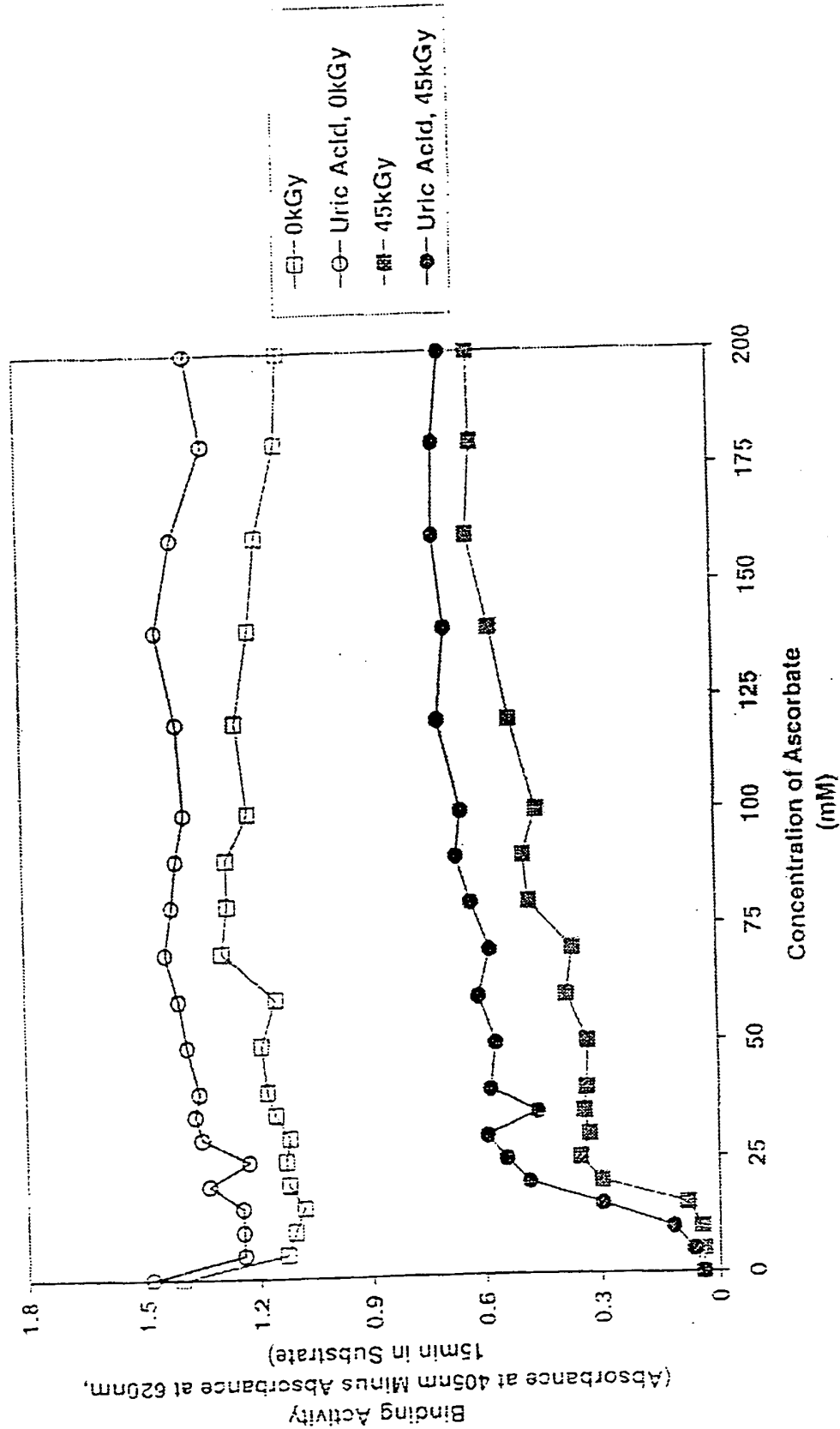


Figure 5

TOP SECRET

Gamma Irradiation of Immobilized Anti-Insulin Monoclonal
Antibody with Varying Ascorbate Concentrations in the Presence or Absence of
2.25mM Uric Acid

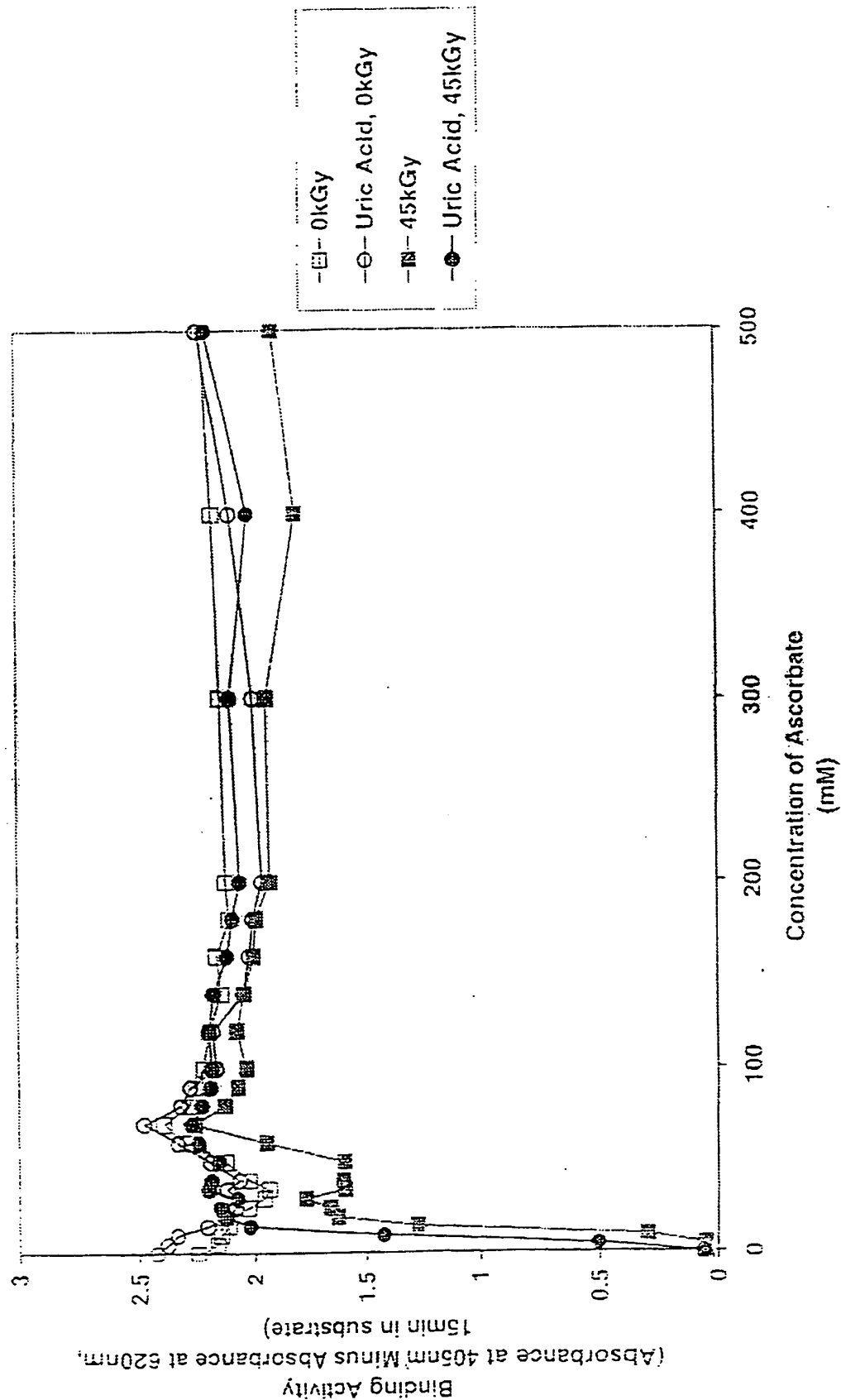
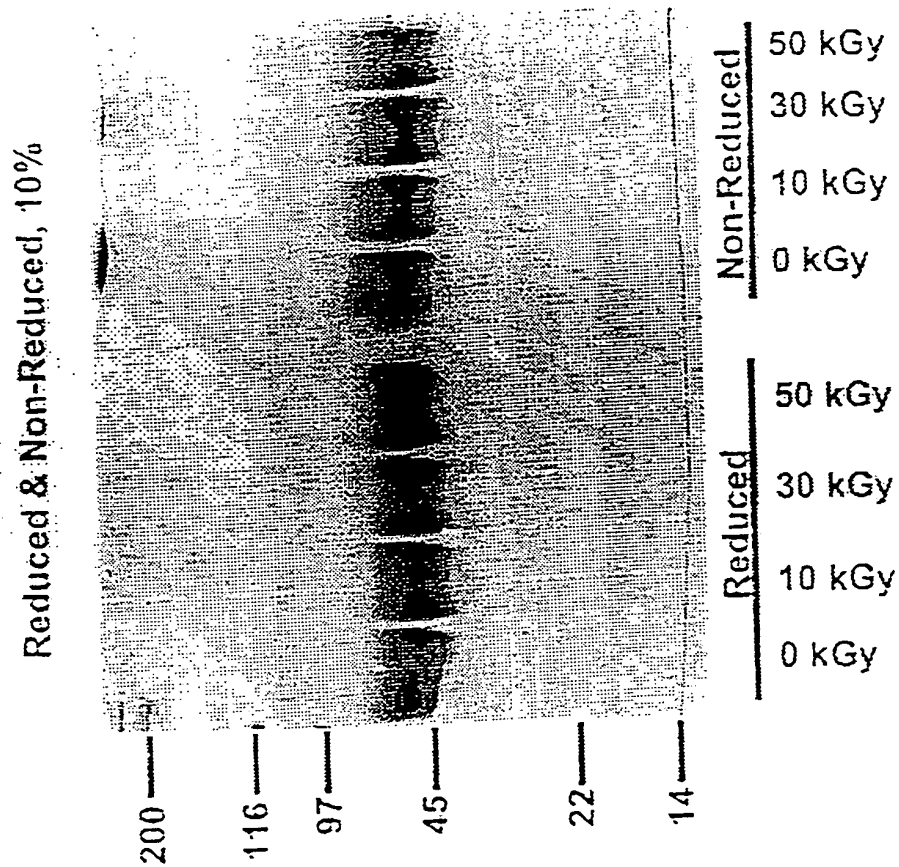


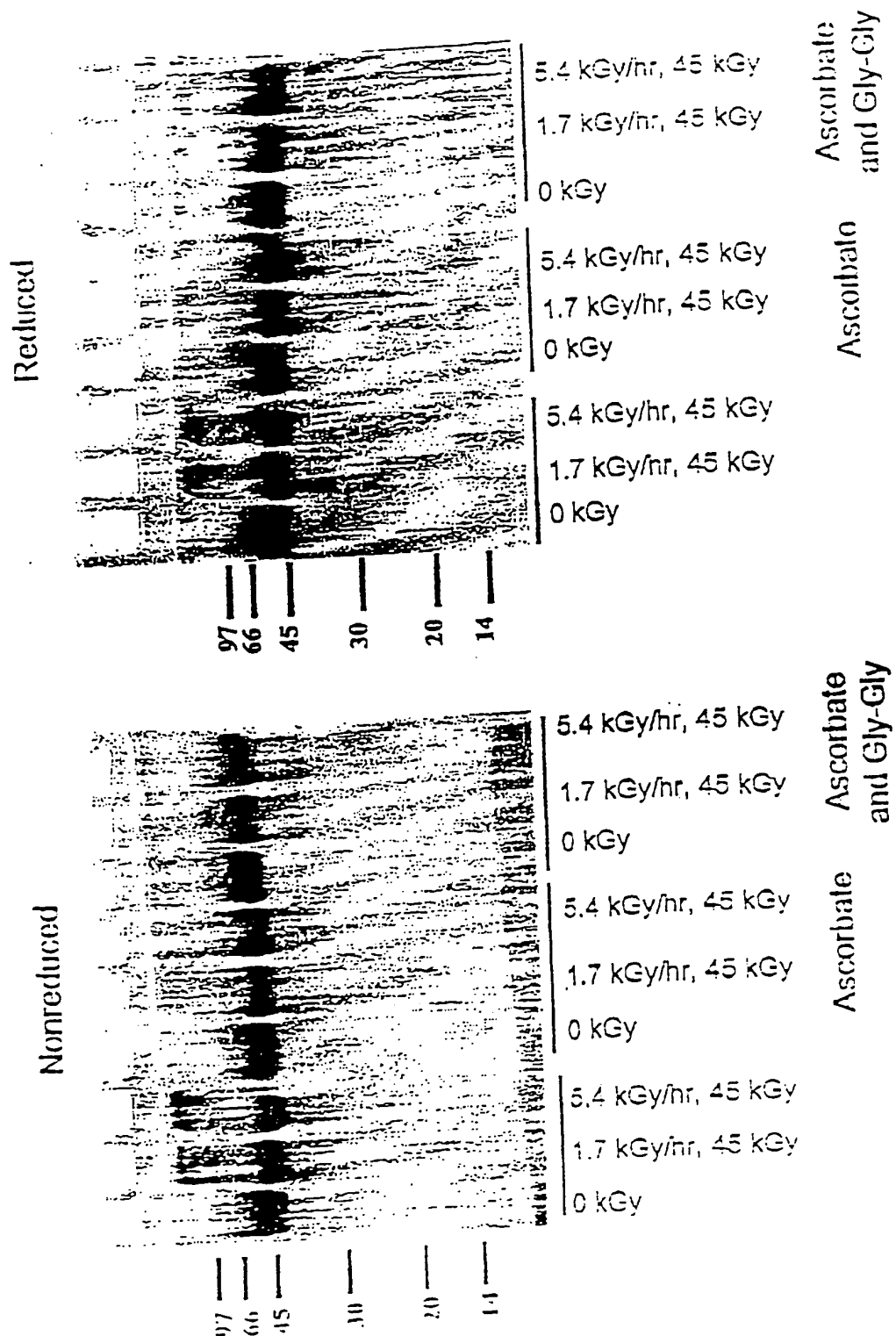
Figure 6

TOPP 3562660

Gamma Irradiation of a Lyophilized Galactosidase
In the Presence of 200mM Ascorbate and 200mM Gly-Gly



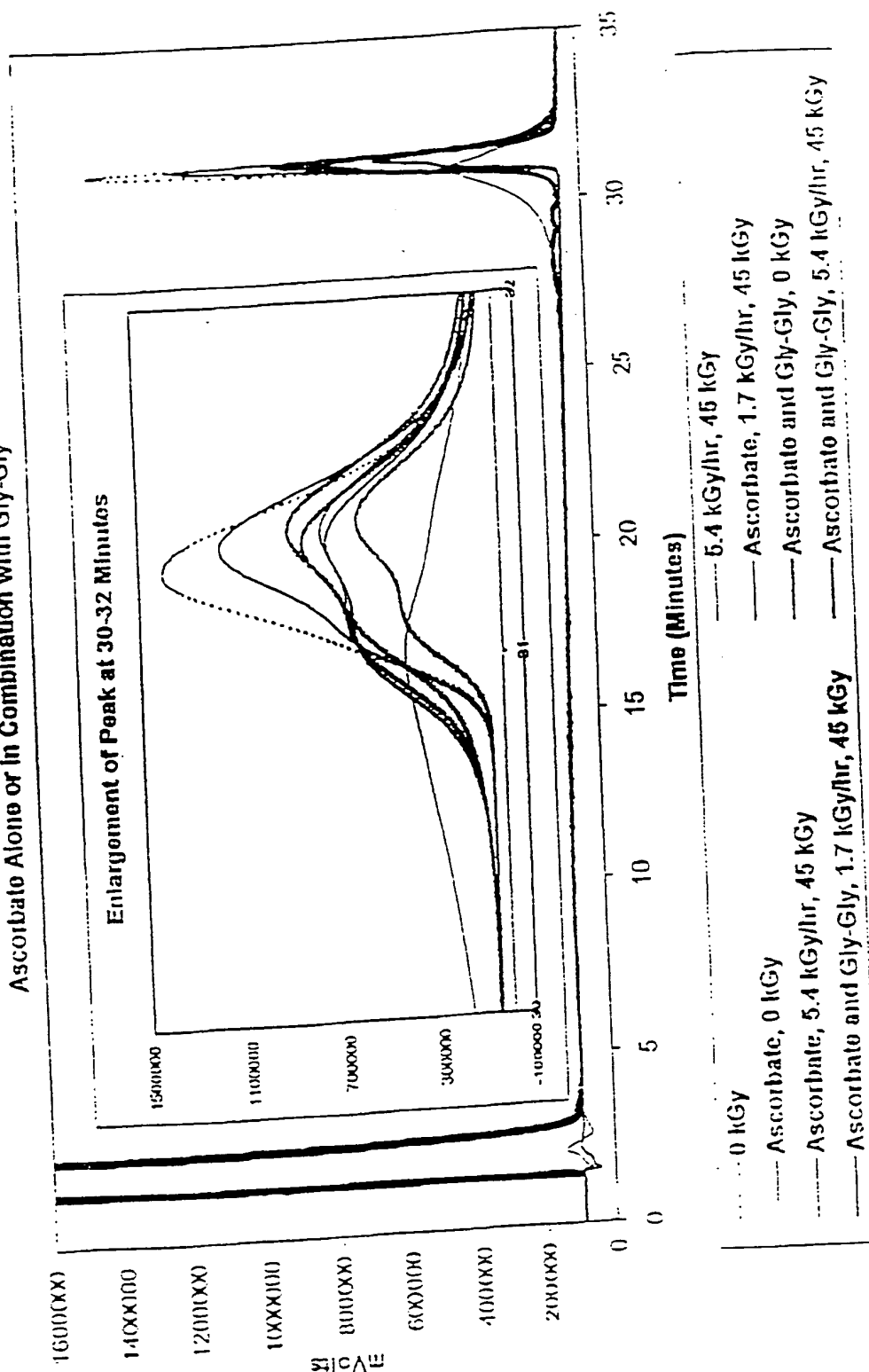
Gamma Irradiation of a Galactosidase in the Absence or Presence of Ascorbate Alone or in Combination with Gly-Gly



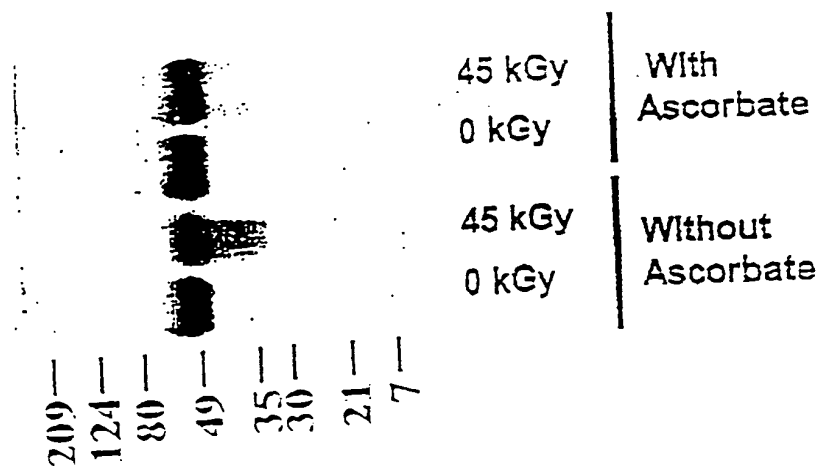
7B

7A

Gamma Irradiation of a Galactosylase in the Presence or Absence of Ascorbate Alone or in Combination with Gly-Gly



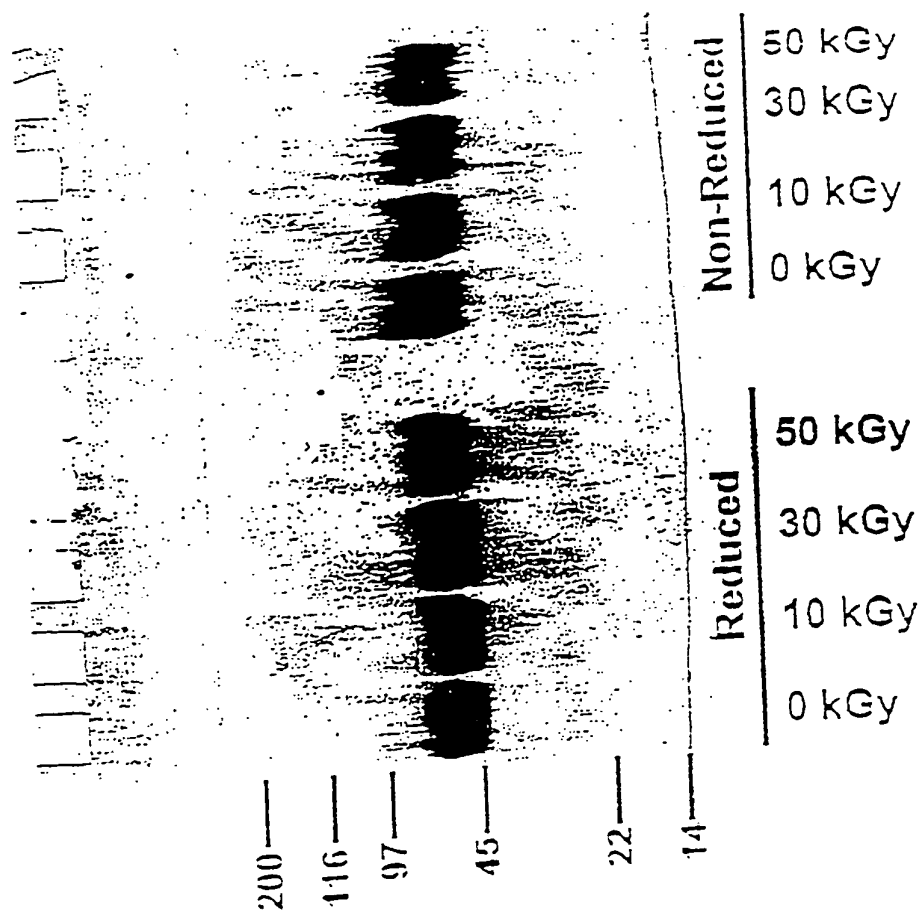
Gamma Irradiation of a Lyophilized Galactosidase in the Absence and Presence of 100mM Ascorbate



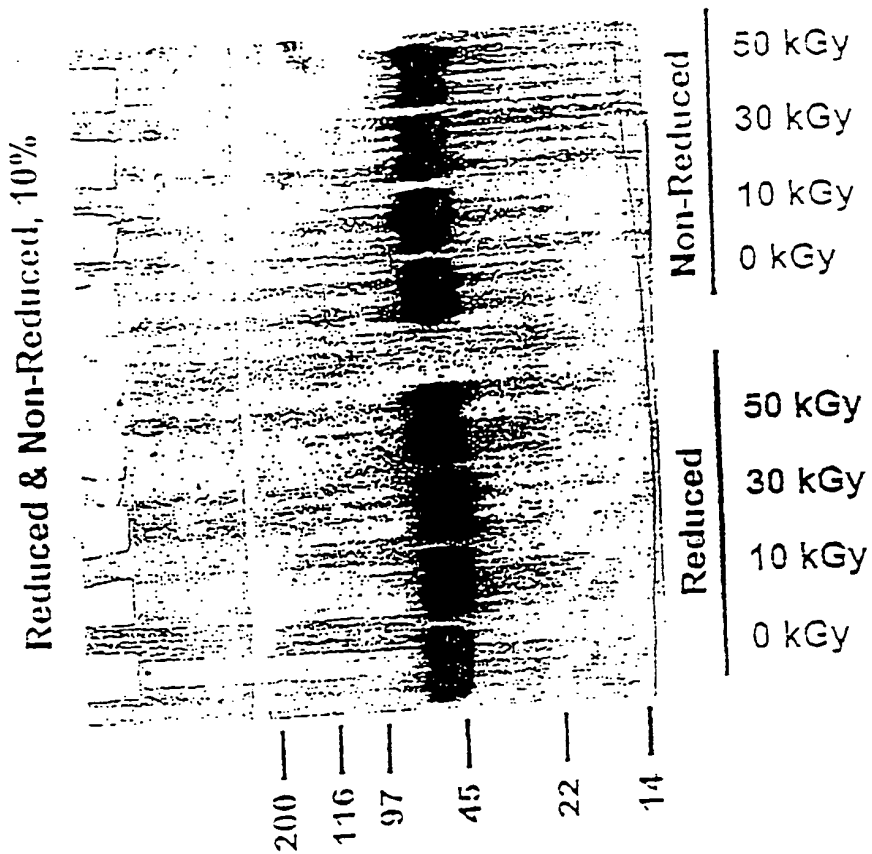
9

Gamma Irradiation of a Lyophilized Galactosidase In the Absence of Stabilizers

Reduced and Non-Reduced, 10%

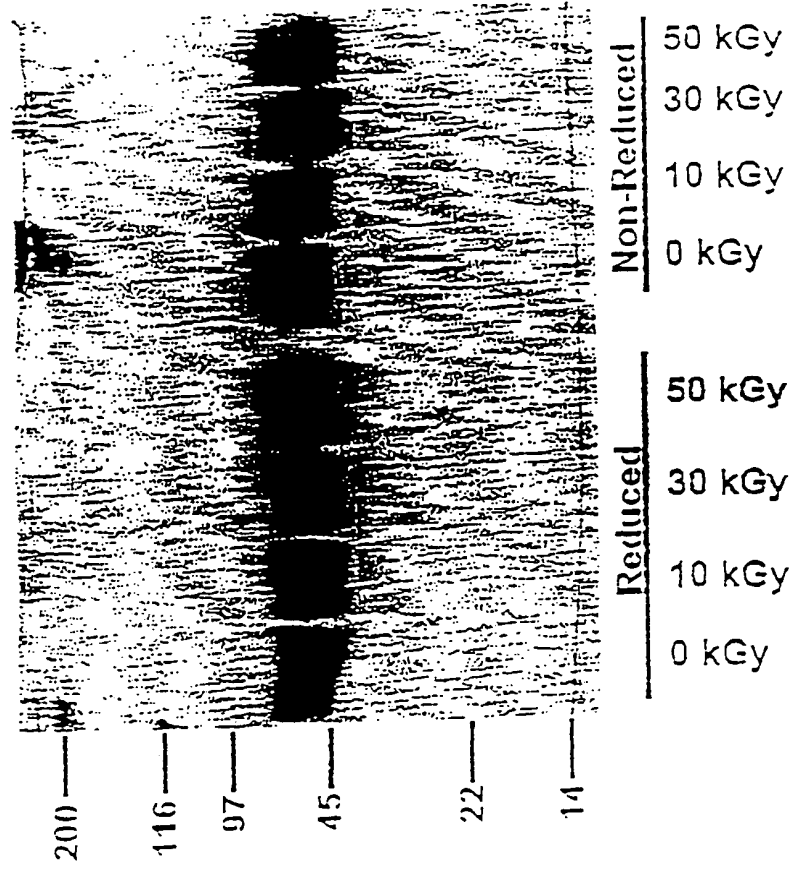


Gamma Irradiation of a Lyophilized Galactosidase In the Presence of 200mM Ascorbate



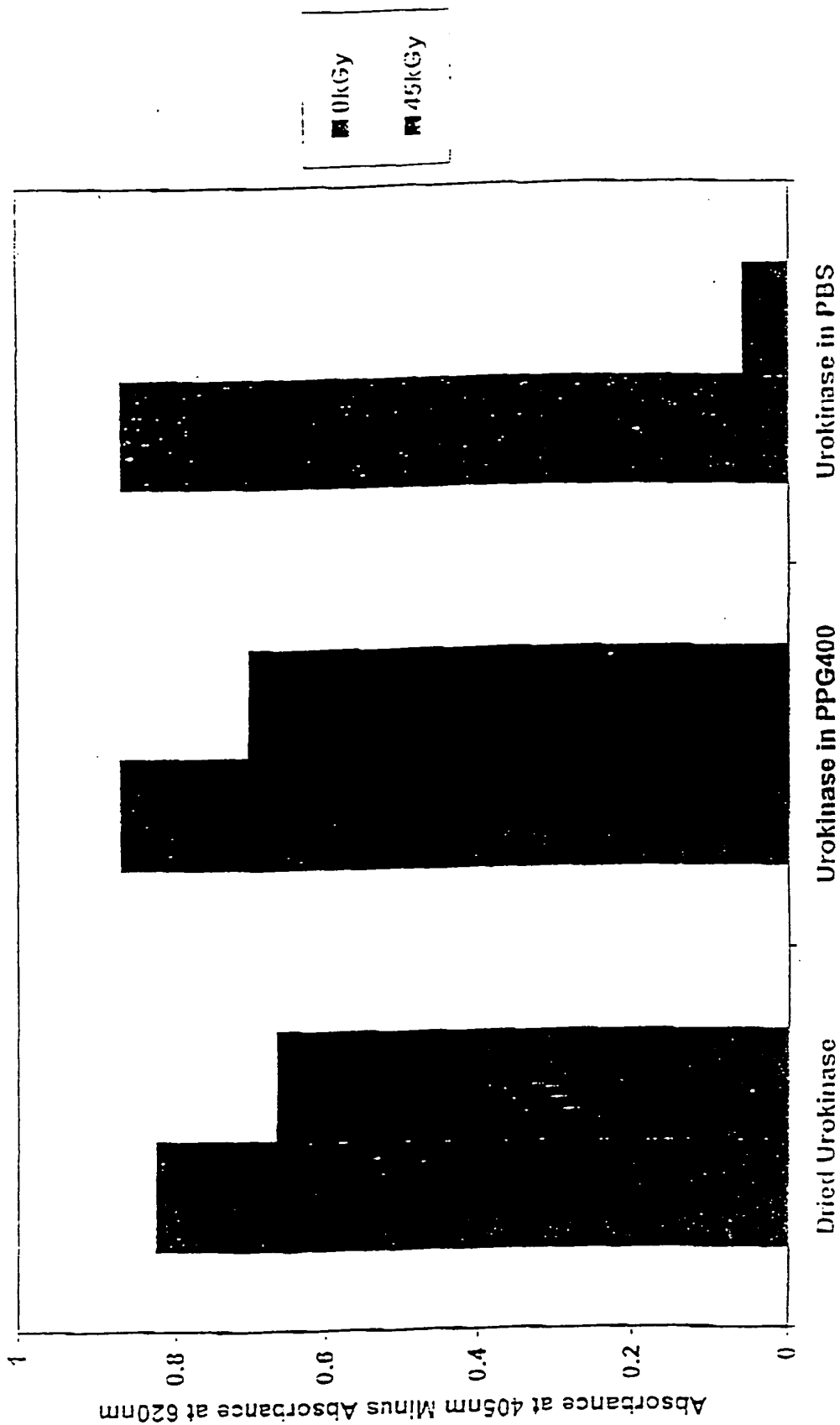
Gamma Irradiation of a Lyophilized Galactosidase In the Presence of 200mM Ascorbate and 200mM Gly-Gly

Reduced & Non-Reduced, 10%

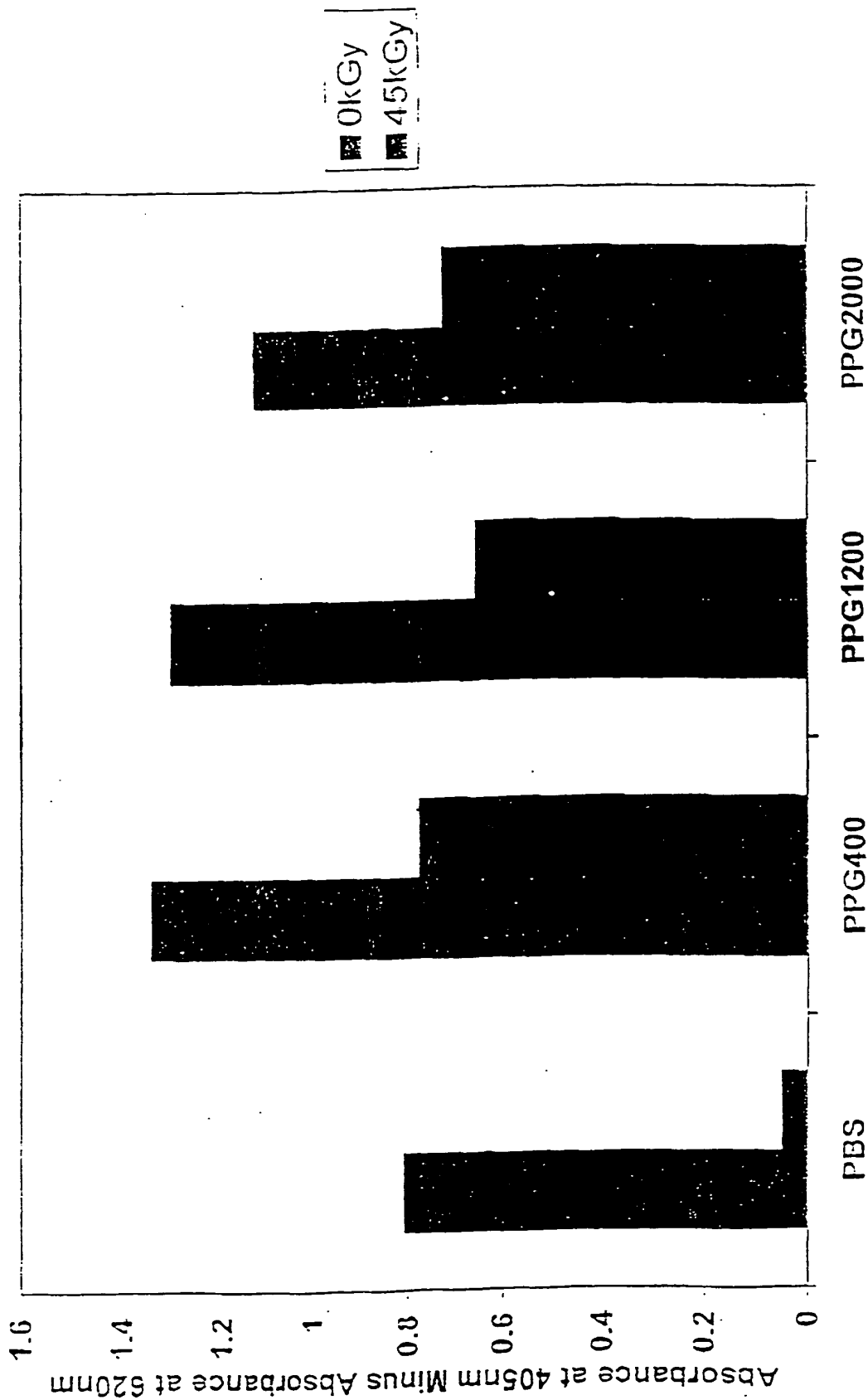


10C

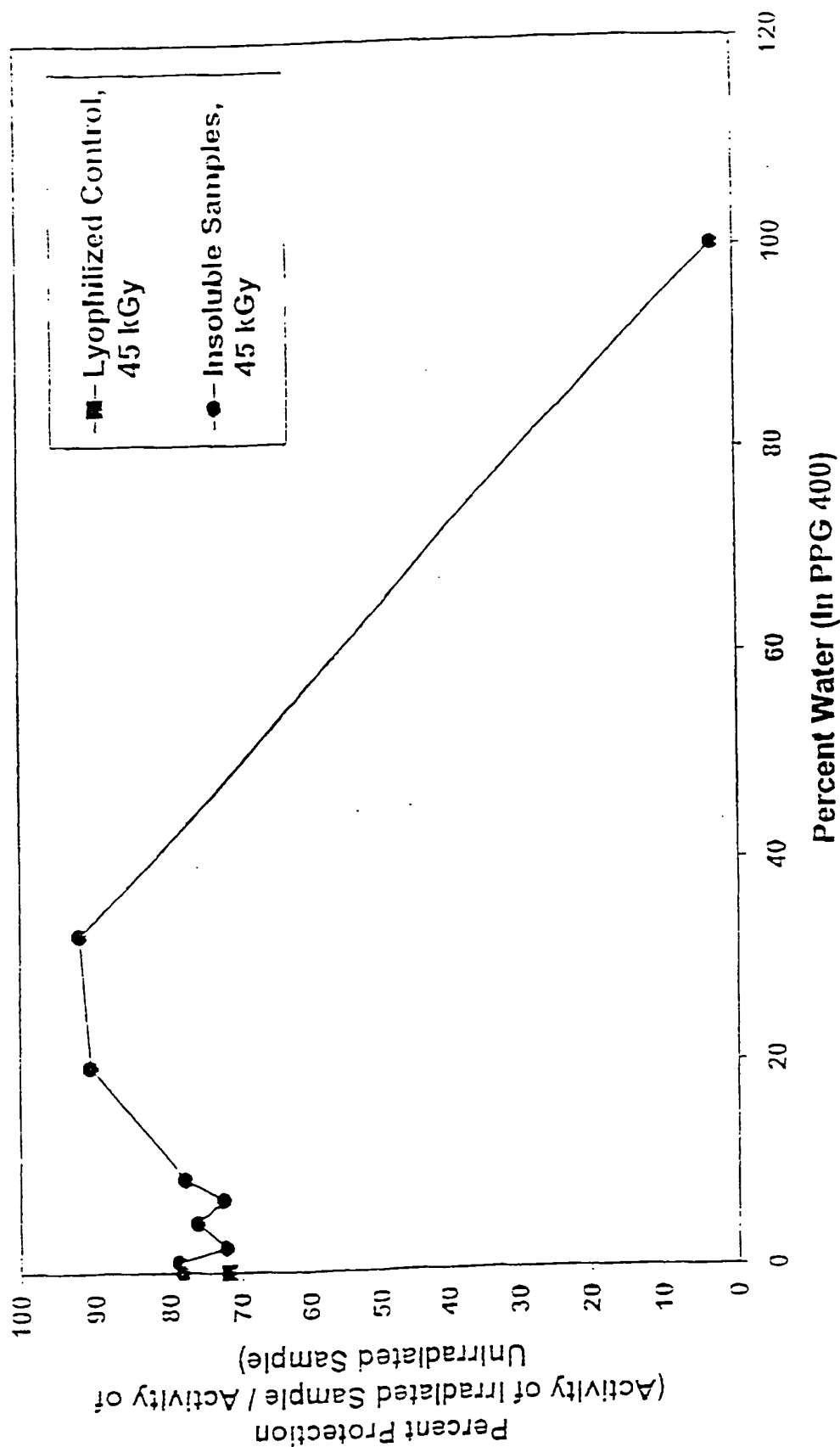
Gamma Irradiation of Dried Urokinase Suspended in PPG400



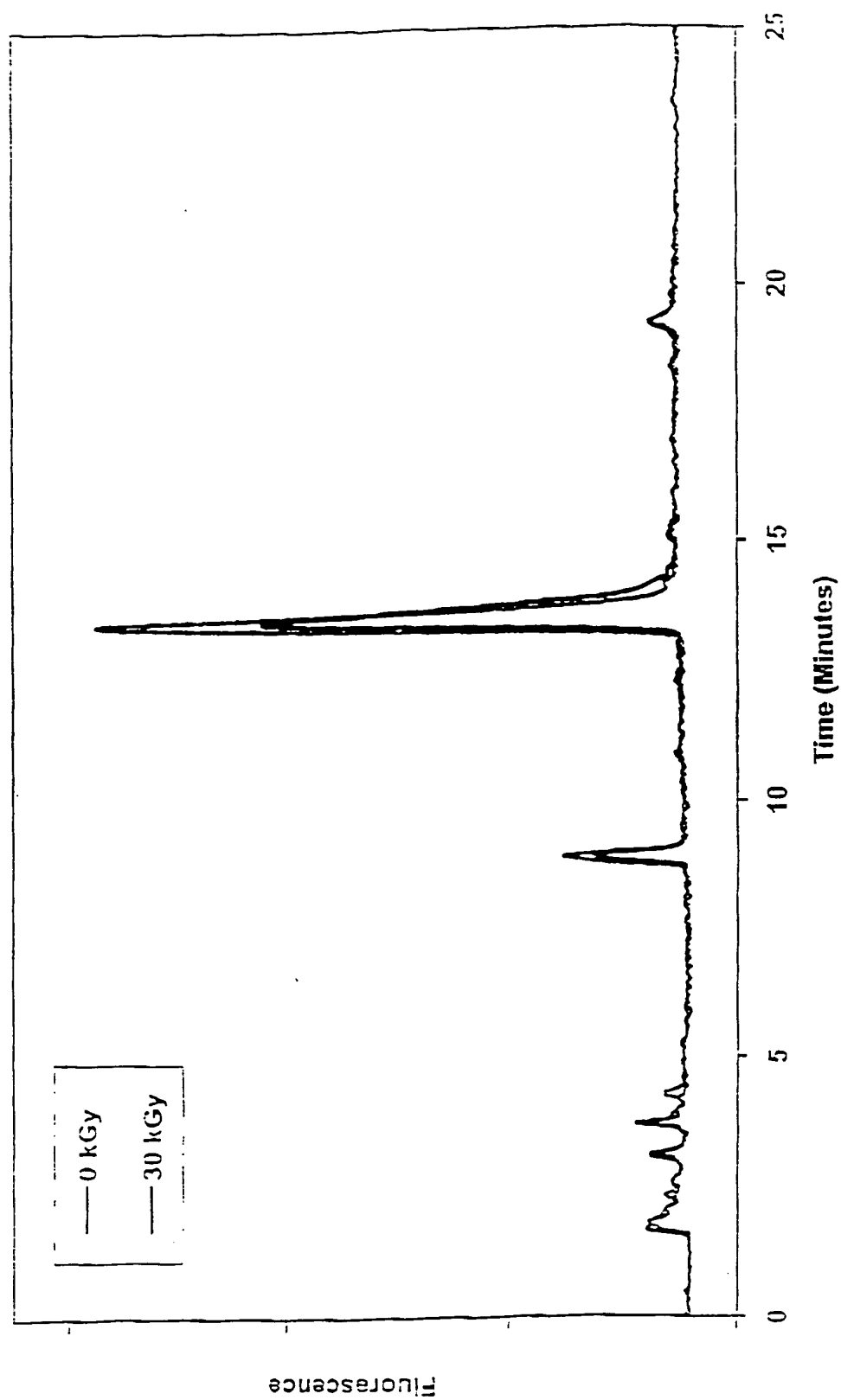
Gamma Irradiation of Immobilized Monoclonal Antibody in the Presence of various PPGs



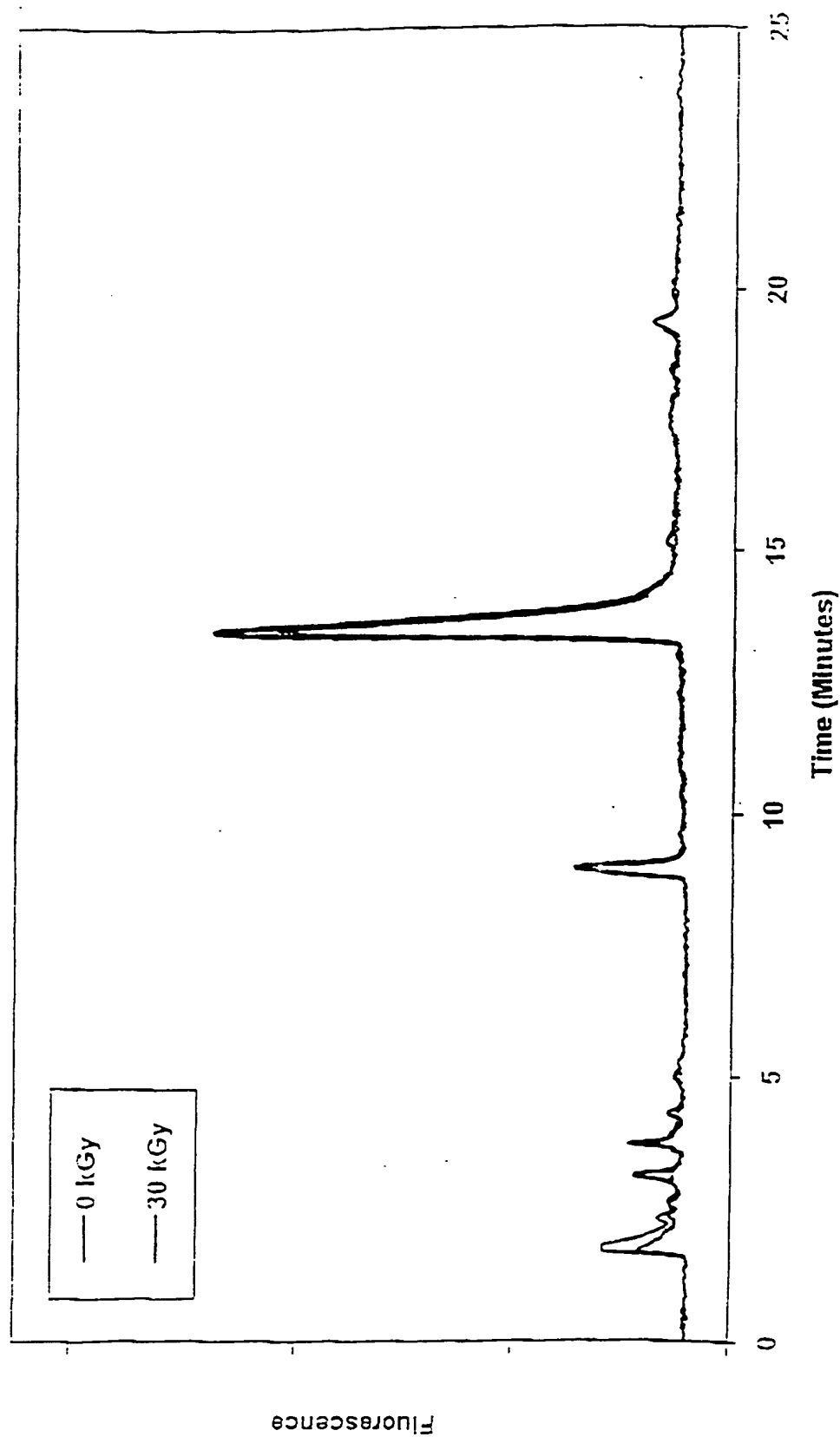
Gamma Irradiation of Trypsin in the Presence of Increasing Amounts of Added Moisture



Gamma Irradiation of Hydrolyzed Heart Valve Cusps in the Presence of PPG 400

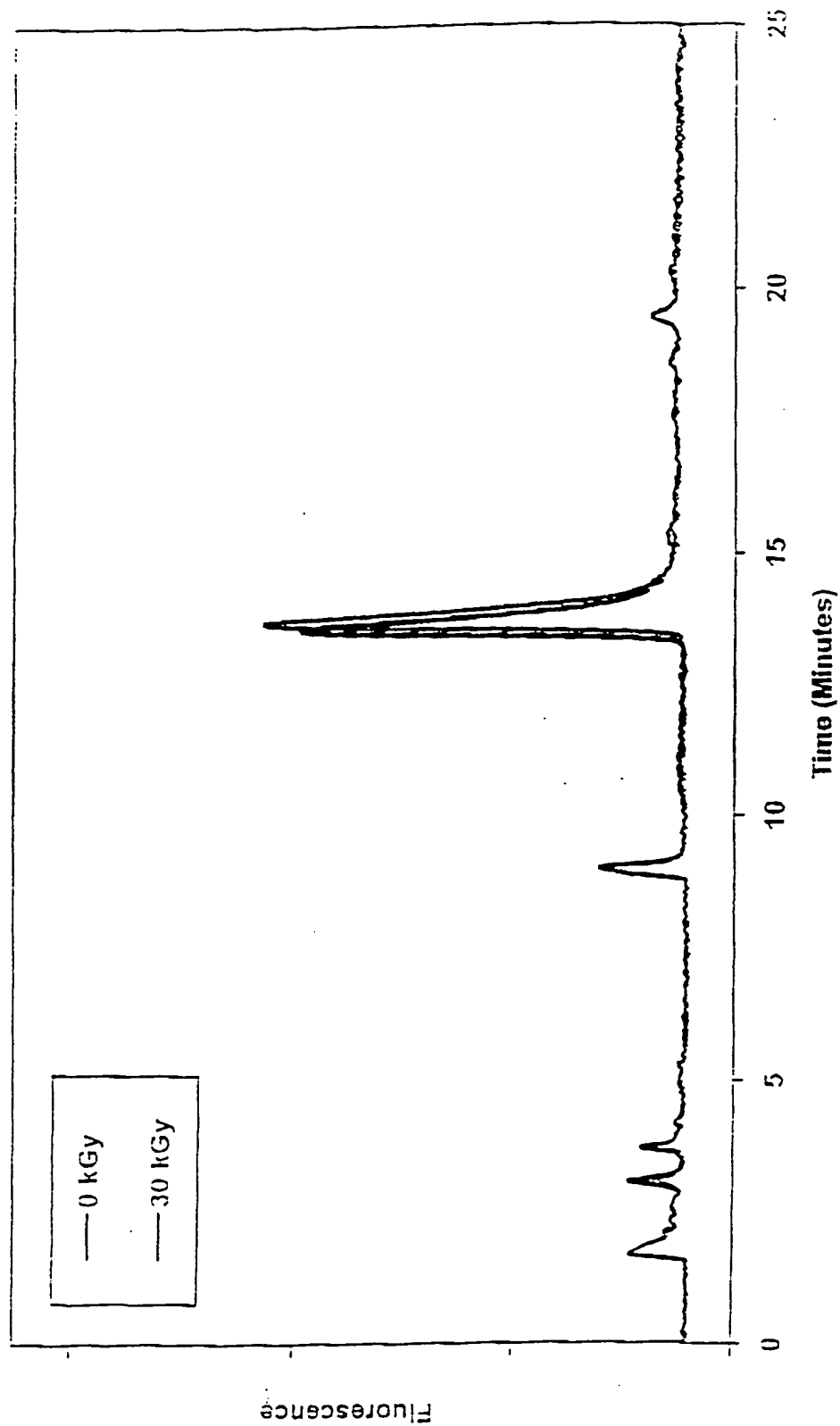


Gamma Irradiation of Hydrolyzed Heart Valve
Cusps in the Presence of PPG 400 and 125 mM Trolox C



HB

Gamma Irradiation of Hydrolyzed Heart Valve Cusps in the Presence
of PPG 400 and a Stabilizer Mixture of 62.5mM Trolox, 100mM Lipoic
Acid, 100mM Coumaric Acid, and 100mM n-Propyl Gallate



Gamma Irradiation of Porcine Heart Valve Cusps in the Presence of PPG400 with Various Stabilizers

1. Molecular Weight Markers

2. Blank

3. PPG400, 0 kGy

4. PPG400, 30 kGy

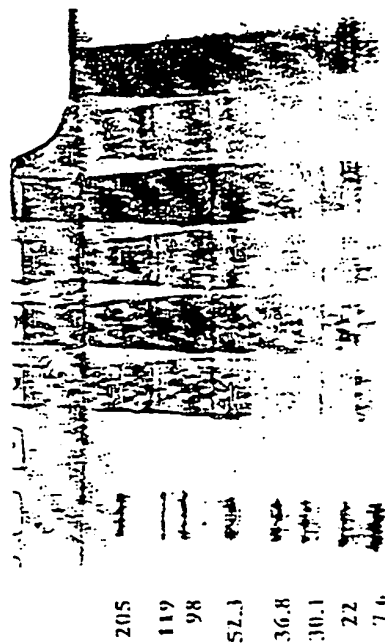
5. PPG400 and Trolox, 0 kGy

6. PPG400 and Trolox, 30 kGy

7. PPG400 and a Cocktail of Trolox, Lipoic Acid, Coumaric Acid, and n-Propyl Gallate, 0 kGy

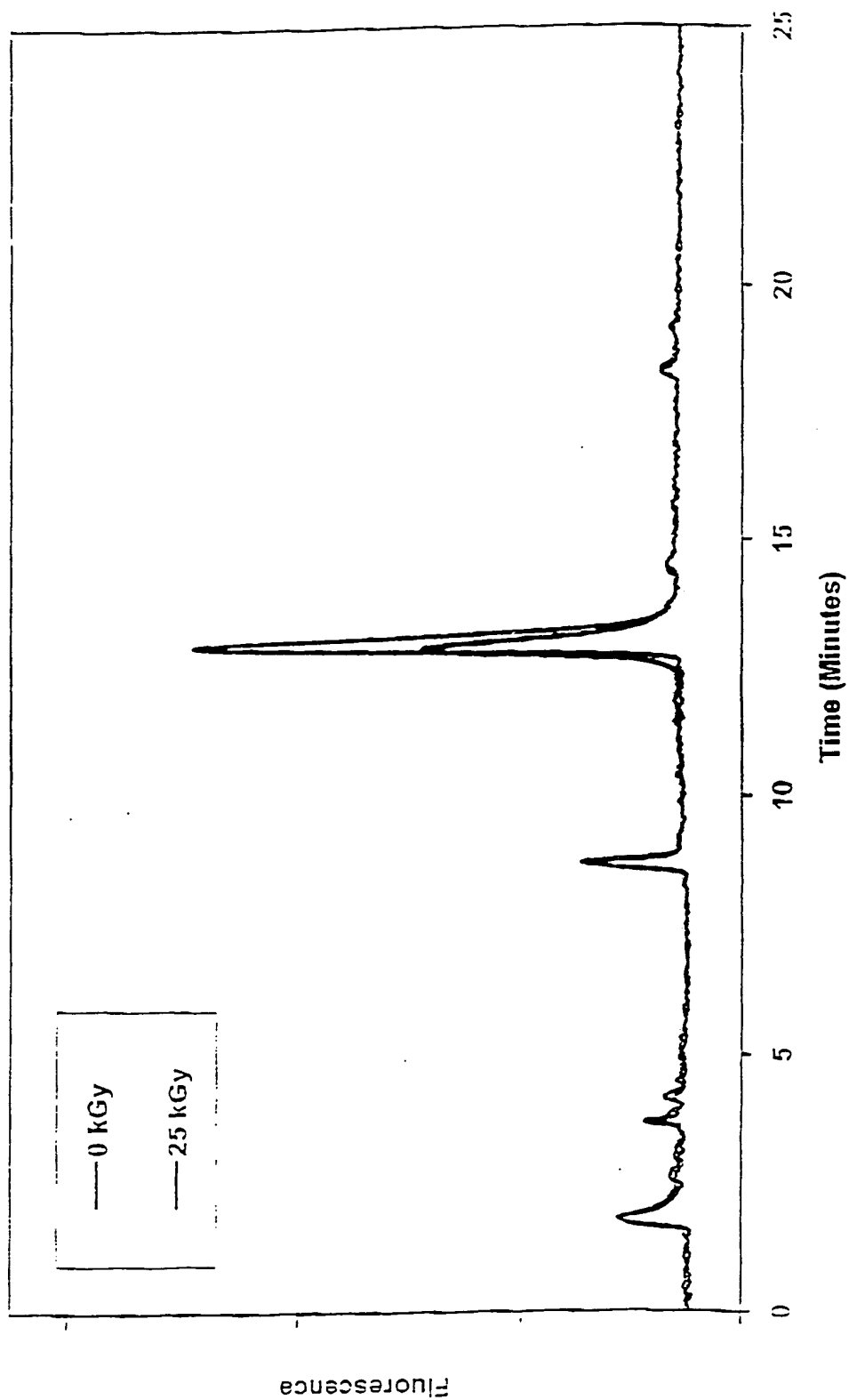
8. PPG400 and a Cocktail of Trolox, Lipoic Acid, Coumaric Acid, and n-Propyl Gallate, 30kGy

Reduced



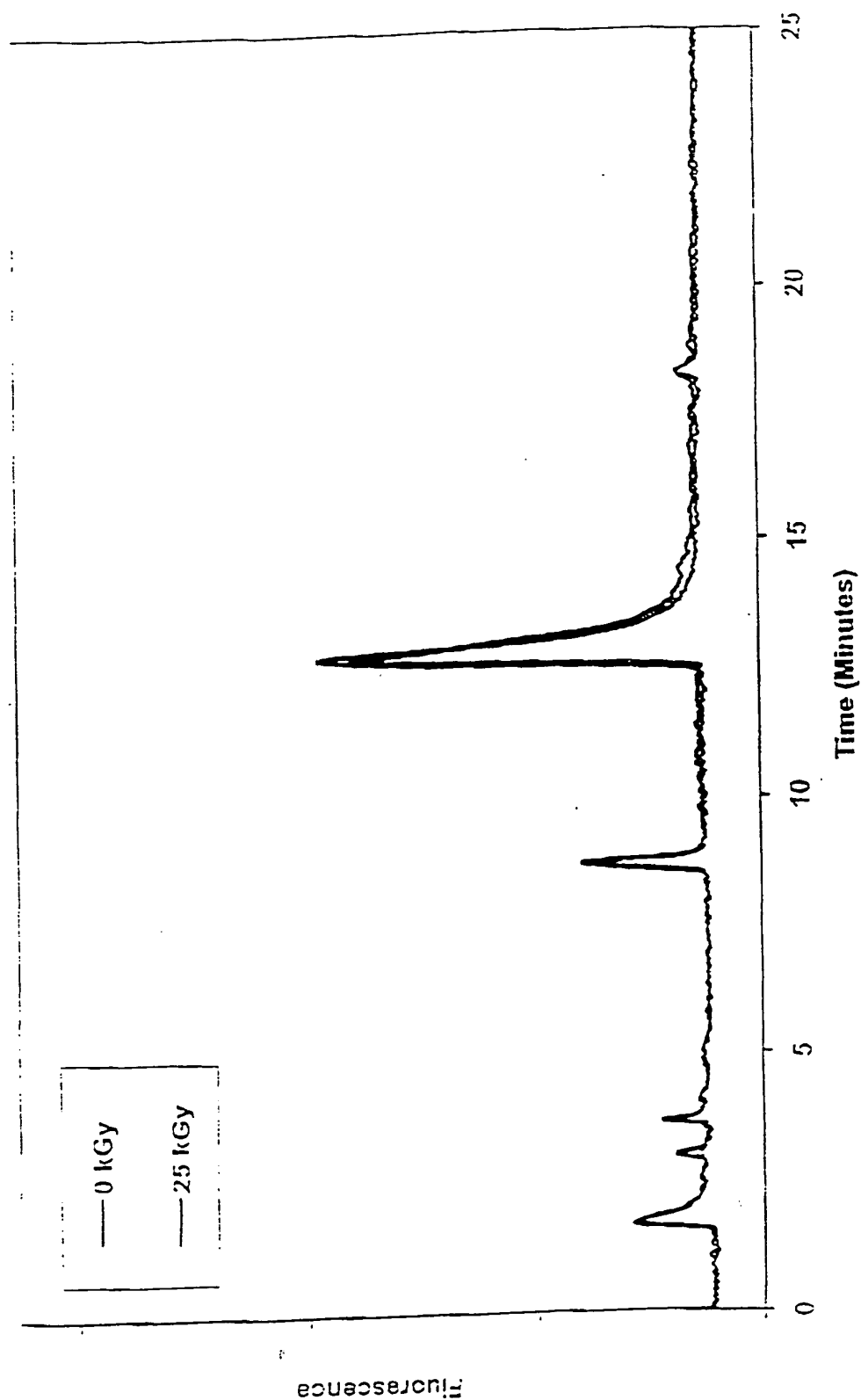
1 2 3 4 5 6 7 8

Gamma Irradiation of Hydrolyzed Heart Valve Cusps in the Presence of PBS



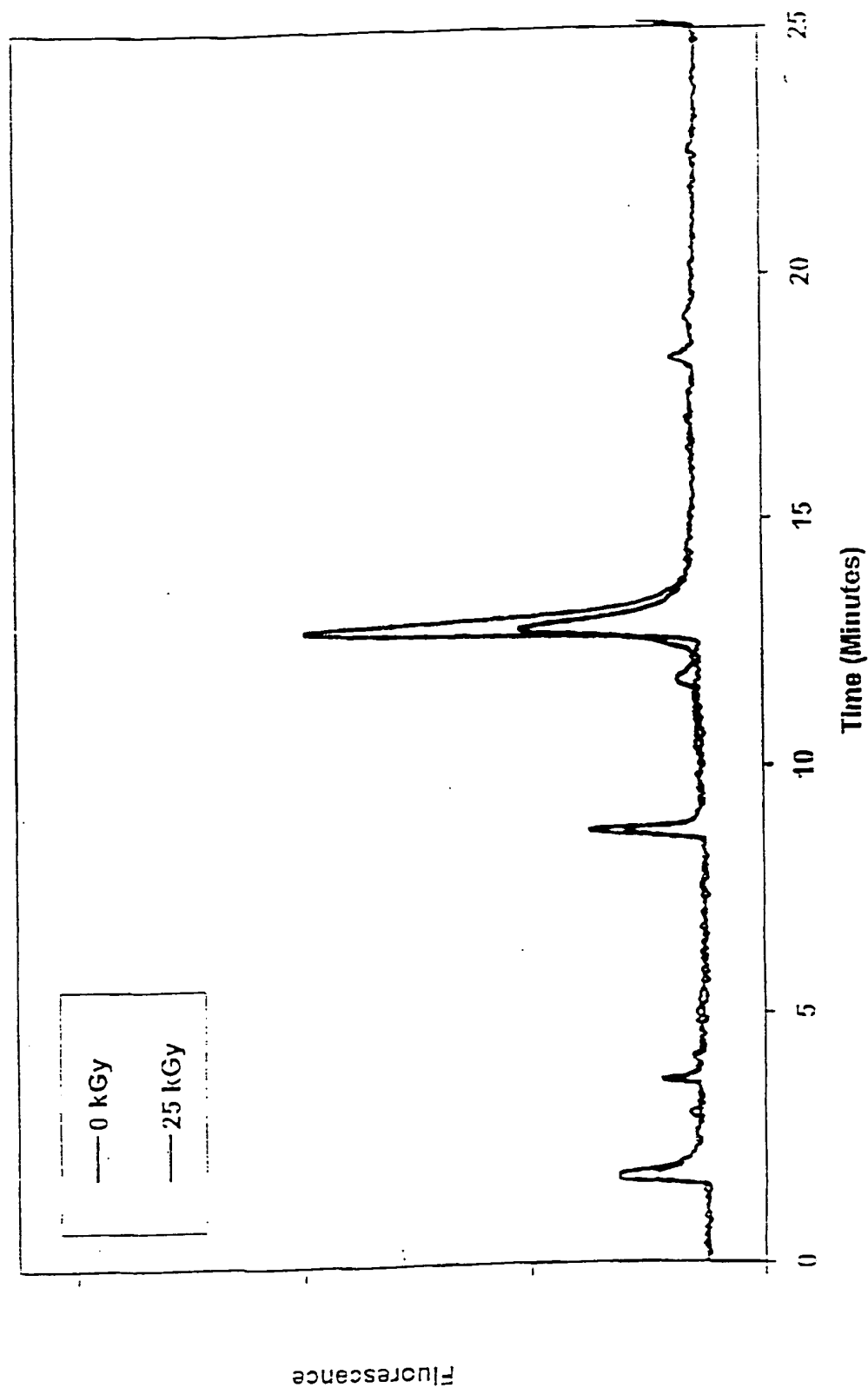
TOP SECRET

Gamma Irradiation of Hydrolyzed Heart Valve Cusps in the Presence of PPG 400



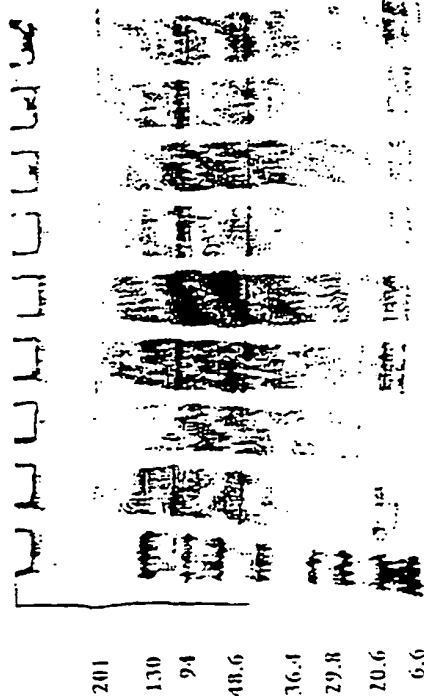
15B

Gamma Irradiation of Hydrolyzed Heart Valve Cusps in the Presence of 50% DMSO



Gamma Irradiation of Porcine Heart Valve Cusps in the Presence of Various Solvents

1. Molecular Weight Markers



2. PBS, 0 kGy

3. PBS, 25 kGy

4. PPG400, 0 kGy

5. PPG400, 25 kGy

6. 50% DMSO, 0 kGy

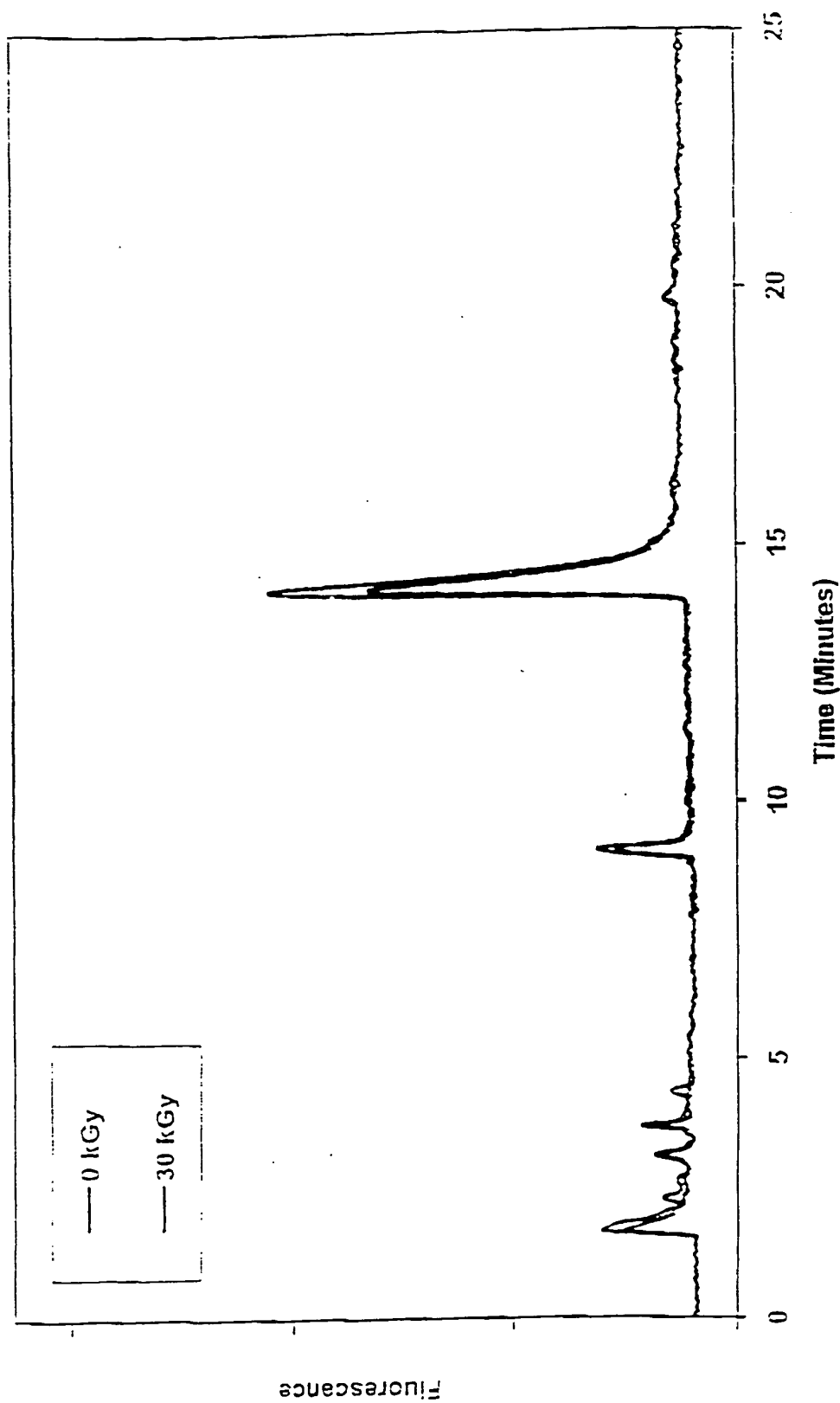
7. 50% DMSO, 25 kGy

8. 50% DMSO and Cocktail of Ascorbate, Coumaric Acid, and n-Propyl Gallate, 0 kGy

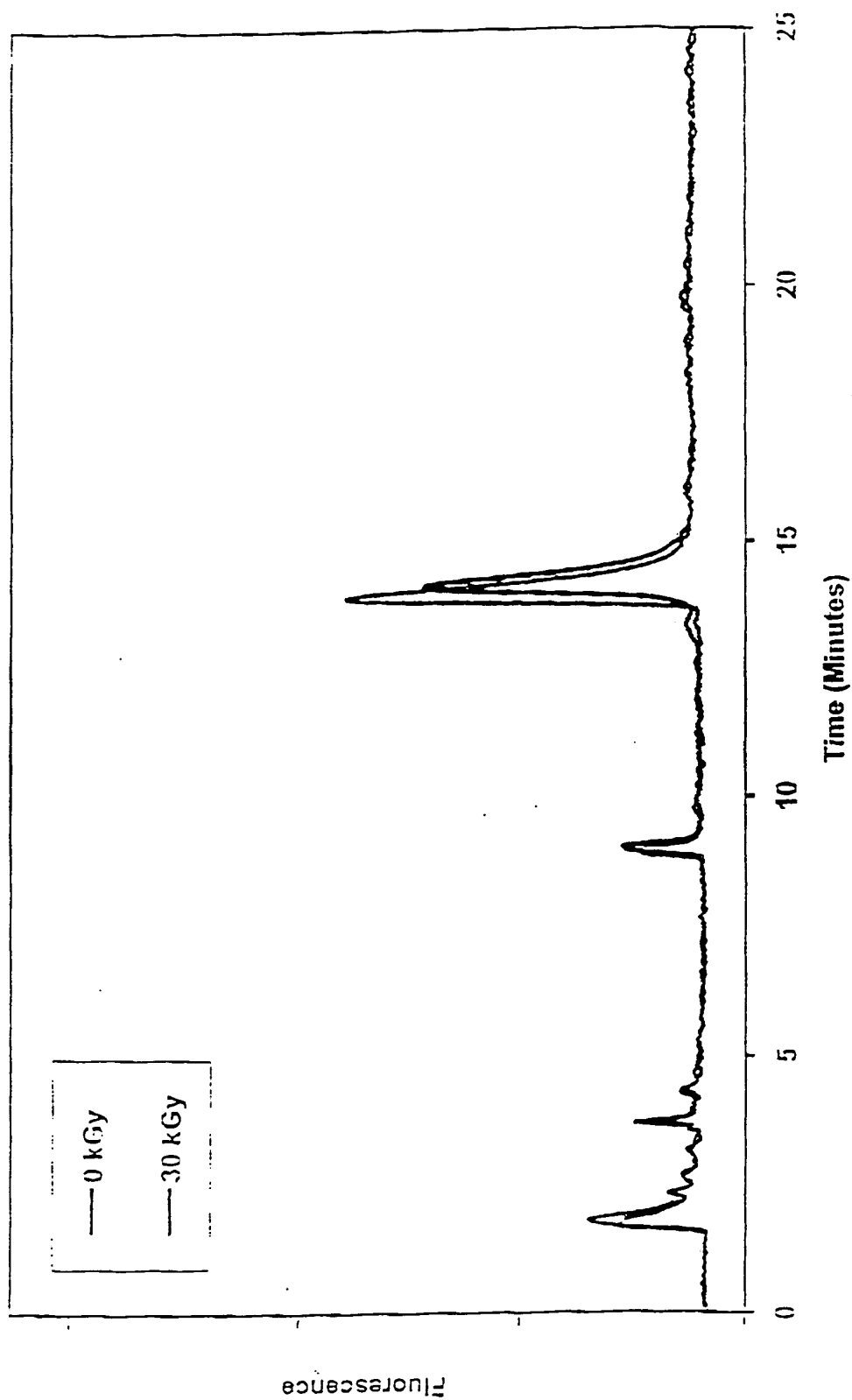
9. 50% DMSO and Cocktail of Ascorbate, Coumaric Acid, and n-Propyl Gallate, 25 kGy

1 2 3 4 5 6 7 8 9

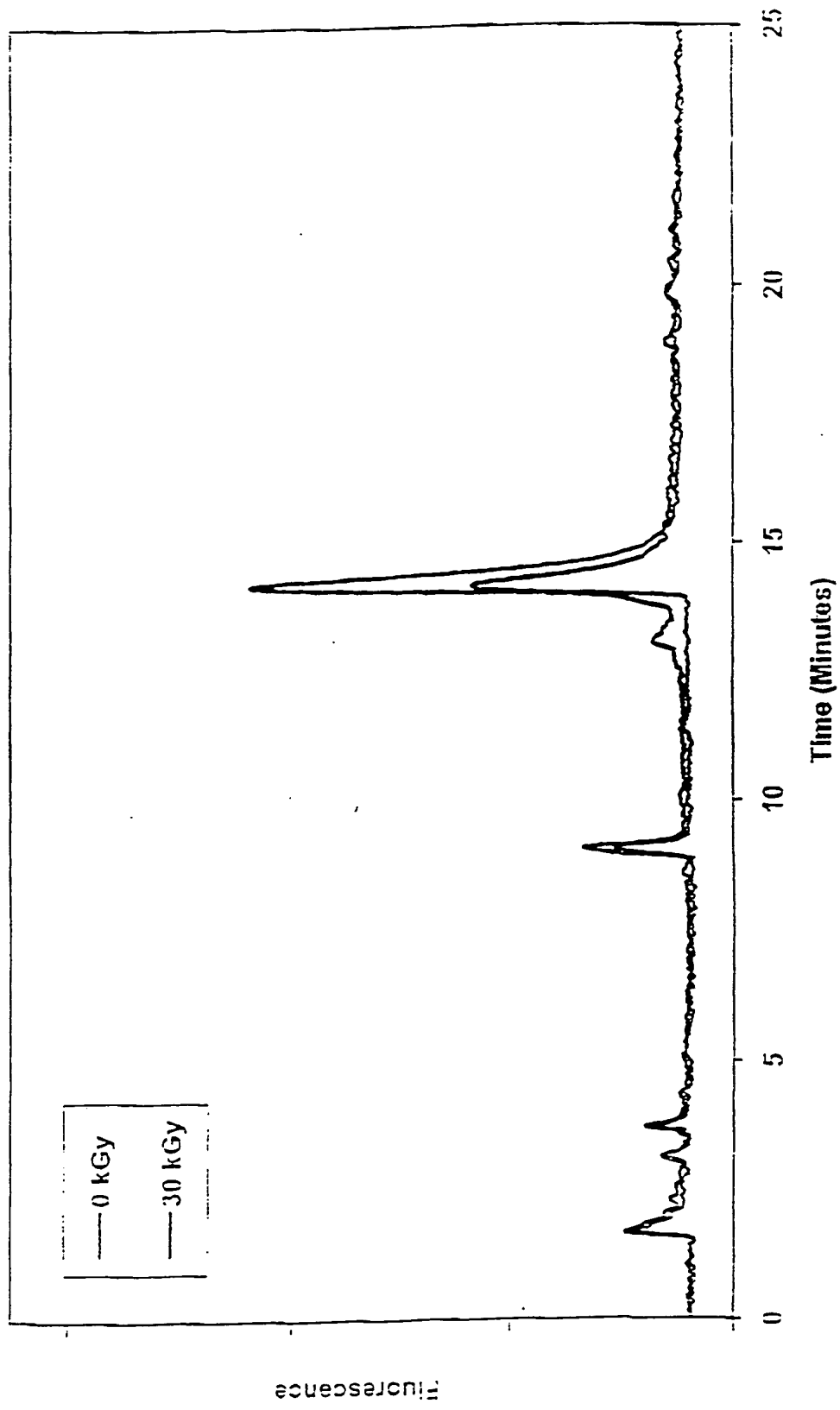
Gamma Irradiation of Hydrolyzed Heart Valve Cusps in the Presence of PBS



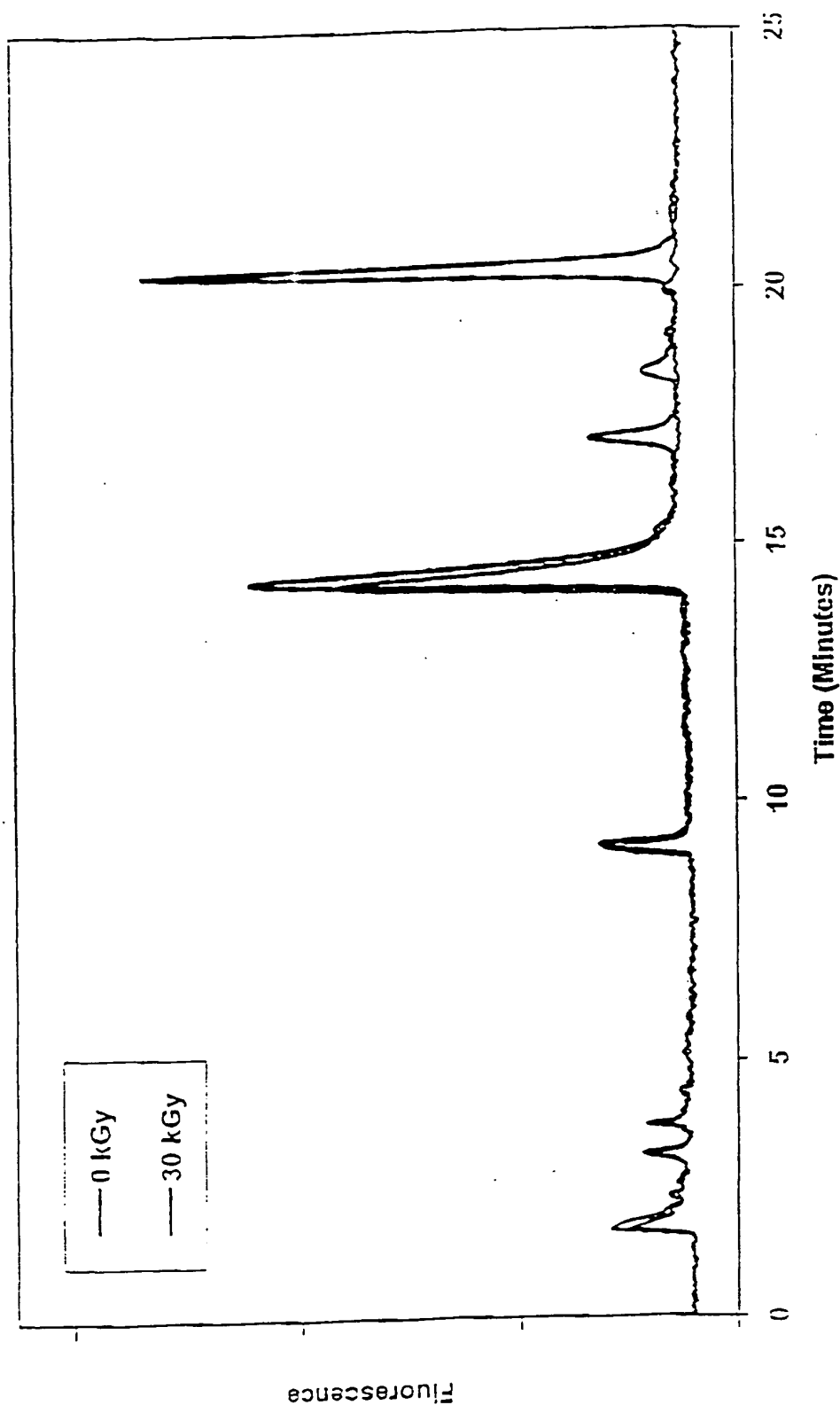
**Gamma Irradiation of Hydrolyzed Heart Valve Cusps in the
Presence of a Cryopreservative (Containing Approximately 20% DMSO)**



Gamma Irradiation of Hydrolyzed Heart Valve Cusps in the Presence of 50% DMSO

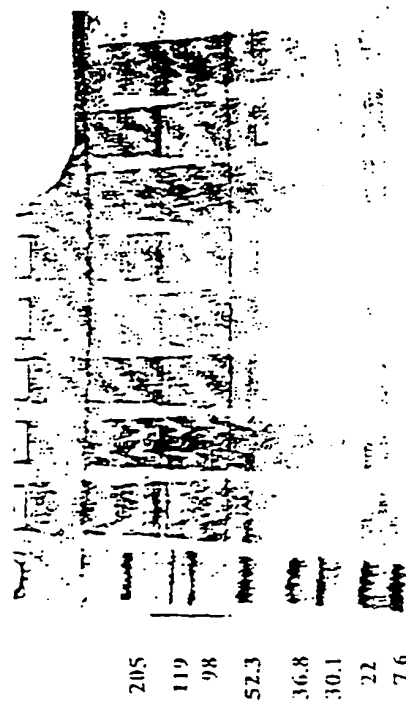


Gamma Irradiation of Hydrolyzed Heart Valve Cusps in the Presence of 50% DMSO and Ascorbate



Gamma Irradiation of Porcine Heart Valve Cusps in the Presence of Various Solvents

Reduced

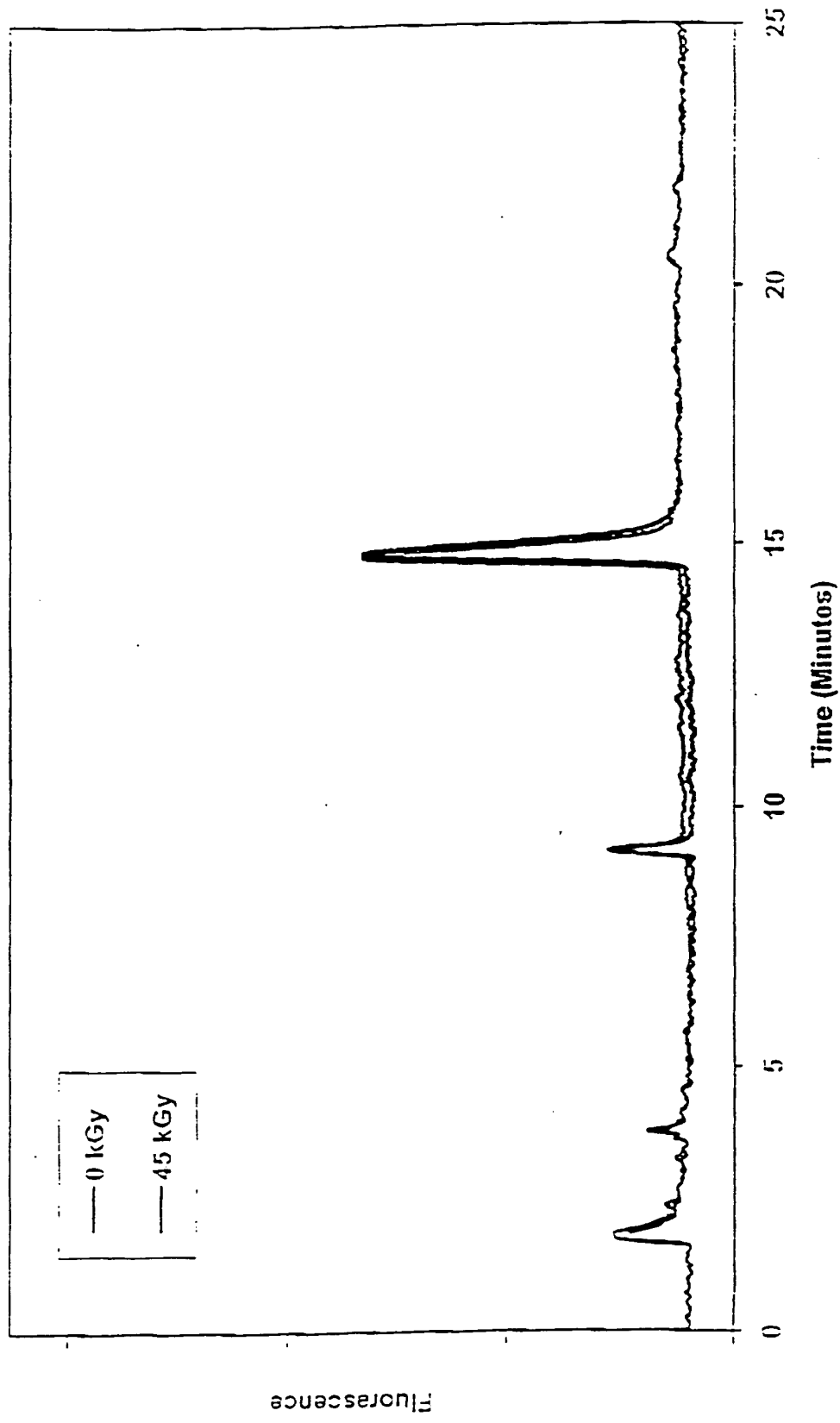


1. Molecular Weight Markers
2. Cryopreservative, 0 kGy
3. Cryopreservative, 30 kGy
4. PBS, 0 kGy
5. PBS, 30 kGy
6. 50% DMSO, 0 kGy
7. 50% DMSO, 30 kGy
8. 50% DMSO and Ascorbate, 0 kGy
9. 50% DMSO and Ascorbate, 30 kGy

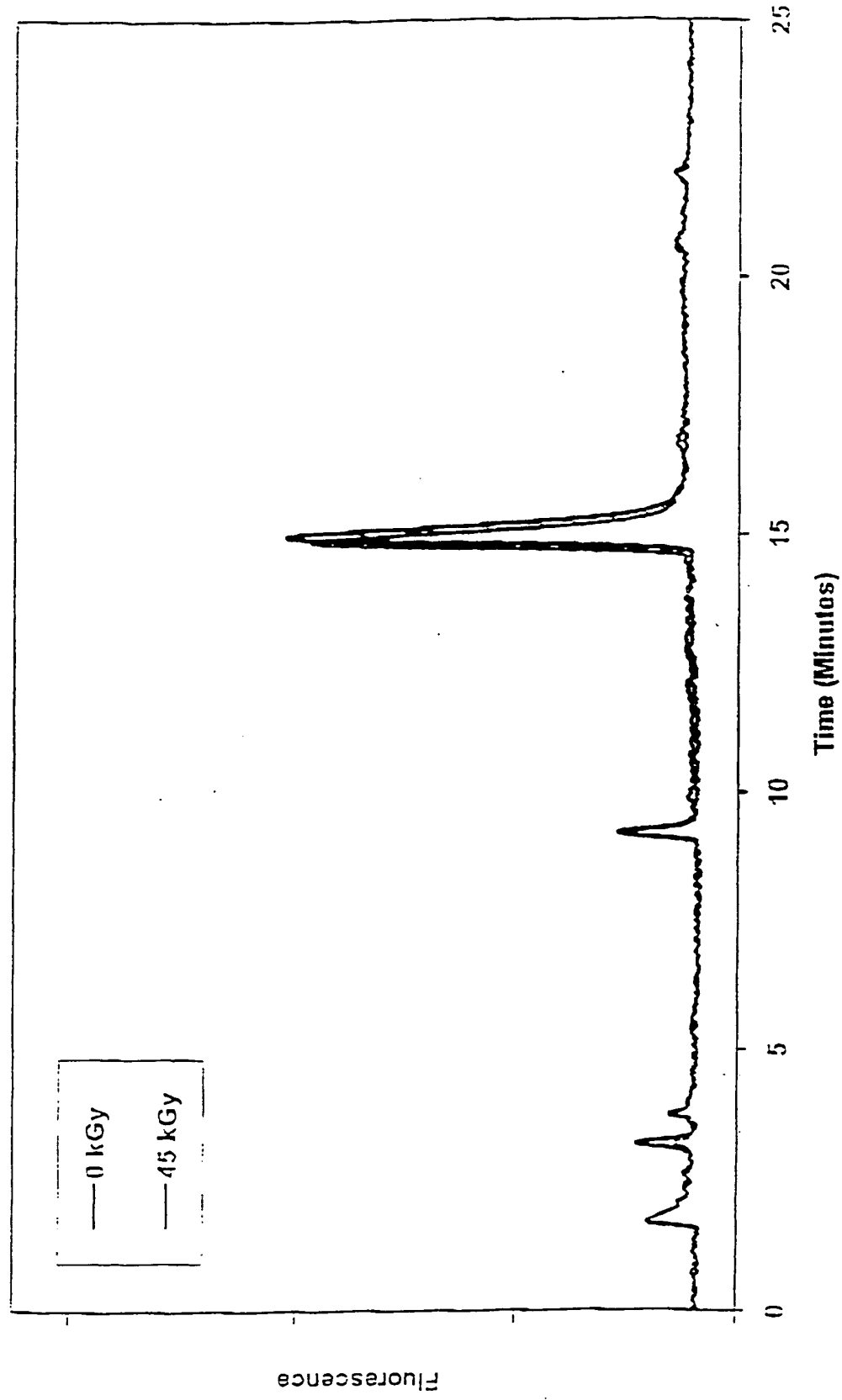
1 2 3 4 5 6 7 8 9

16E

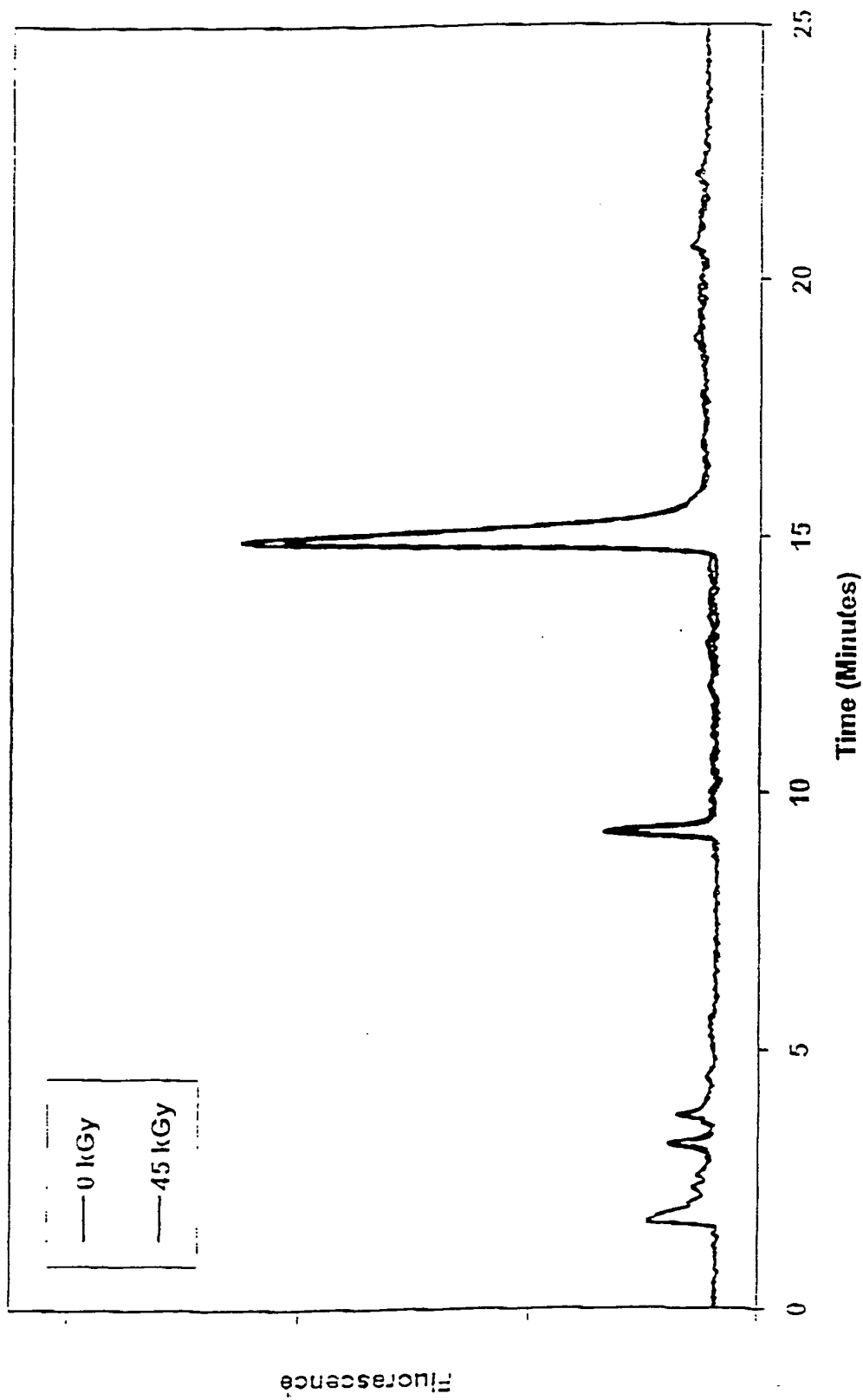
Gamma Irradiation of Hydrolyzed Heart Valve Cusps in the Presence of PBS



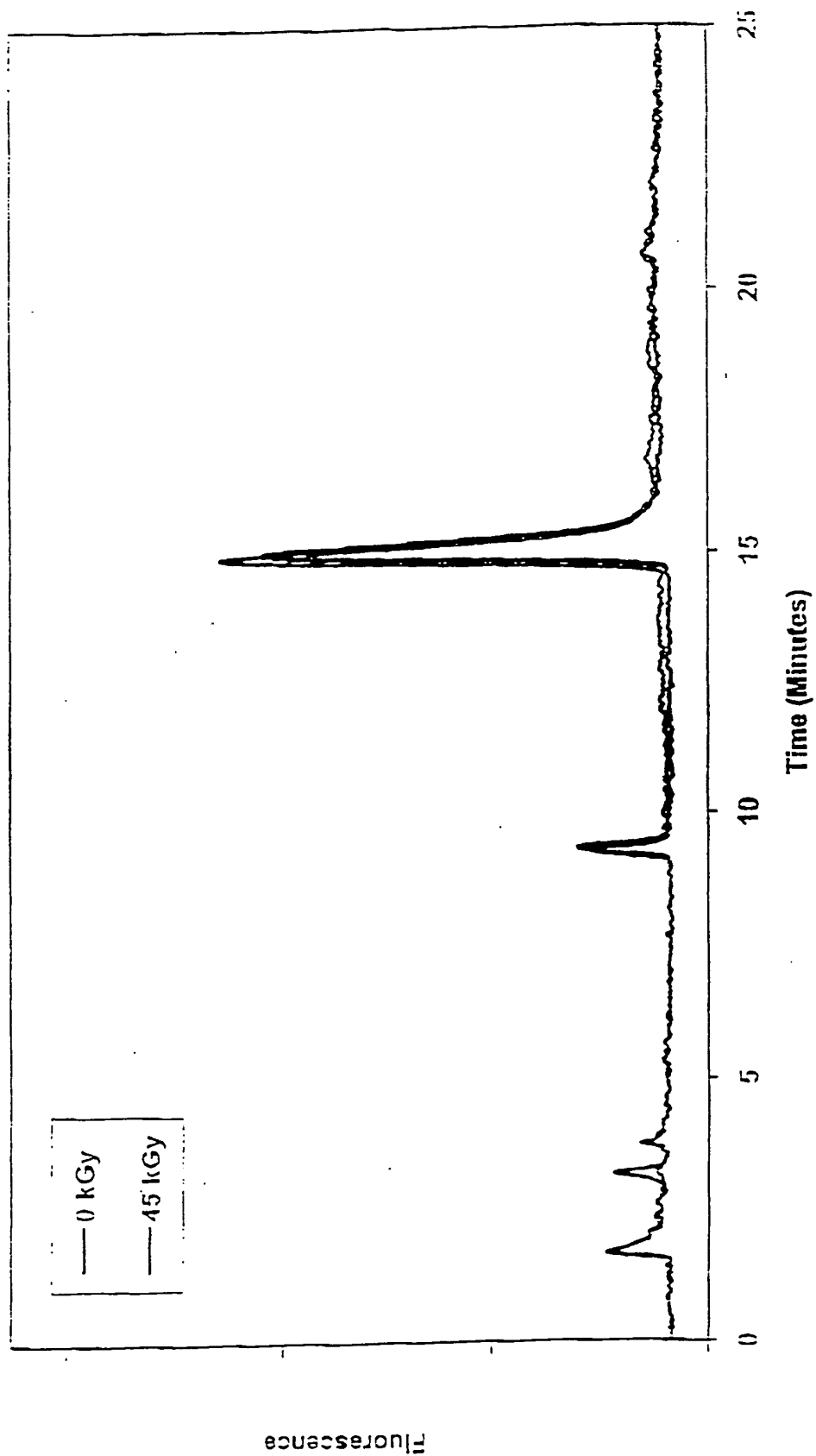
Gamma Irradiation of Hydrolyzed Heart Valve Cusps in the Presence of PBS and Ascorbate



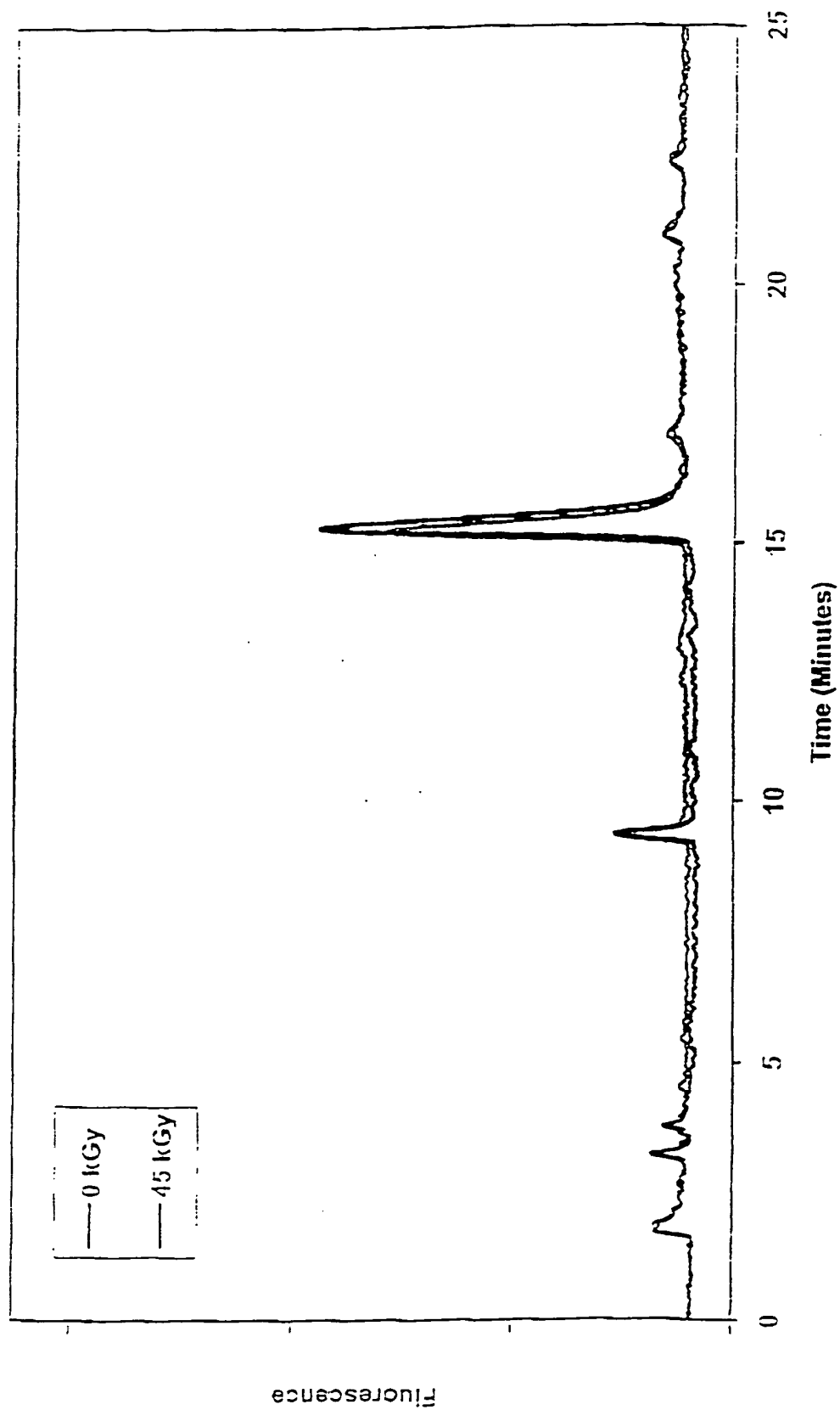
Gamma Irradiation of Hydrolyzed Heart Valve Cusps in the Presence of PPG 400



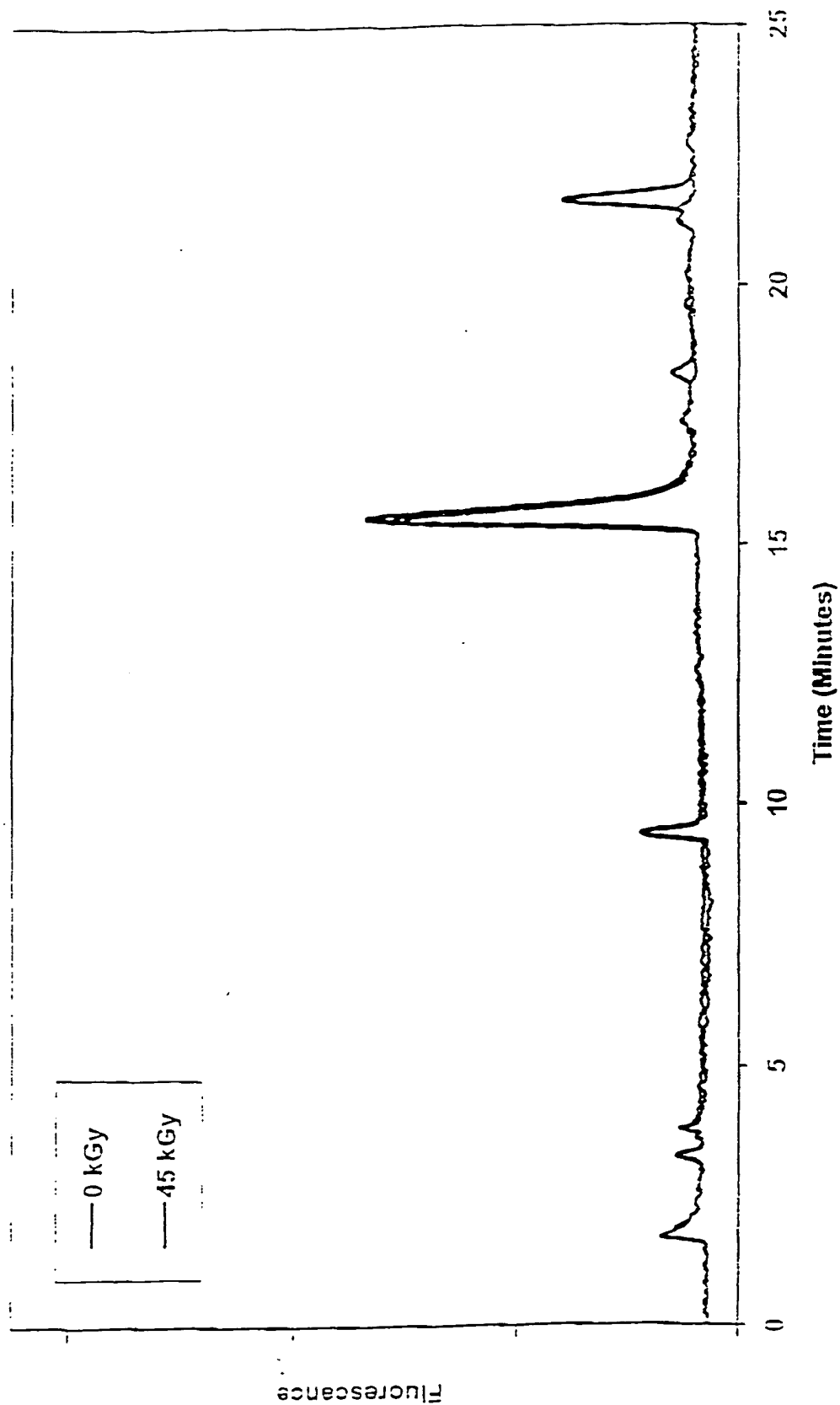
Gamma Irradiation of Hydrolyzed Heart Valve Cusps Dehydrated with PPG 400 and Rehydrated in the Presence of PBS and Ascorbate



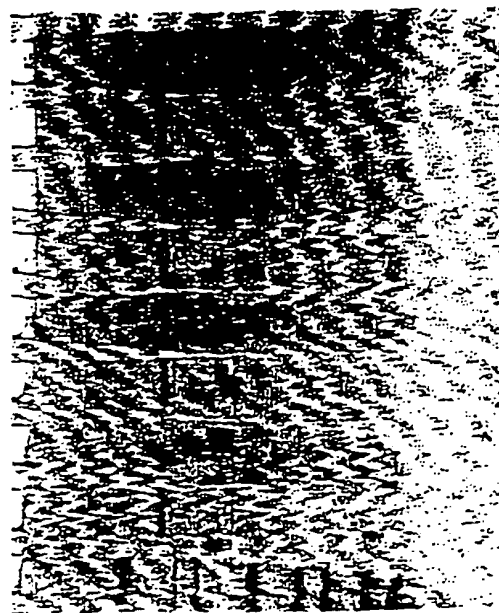
Gamma Irradiation of Hydrolyzed Heart Valve Cusps in the Presence of 50% DMSO



Gamma Irradiation of Hydrolyzed Heart Valve Cusps
in the Presence of 50% DMSO and Ascorbate



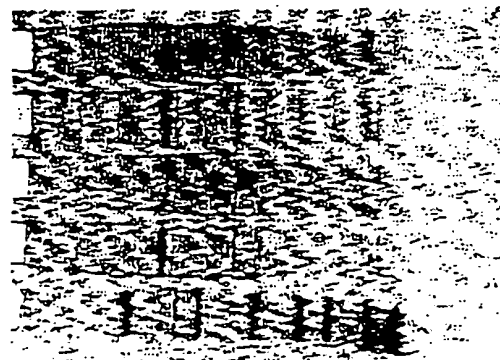
Gamma Irradiation of Porcine Heart Valve Cusps in the Presence of Various Solvents



205
119
98
52.3
36.8
30.1
22
7.6

1. Molecular Weight Markers
2. PBS, 0 kGy
3. PBS, 45 kGy
4. PBS and Ascorbate, 0 kGy
5. PBS and Ascorbate, 45 kGy
6. PPG400, 0 kGy
7. PPG400, 45 kGy
8. Dehydrated in PPG400 and Rehydrated with PBS and Ascorbate, 0 kGy
9. Dehydrated in PPG400 and Rehydrated with PBS and Ascorbate, 45 kGy

Gamma Irradiation of Porcine Heart Valve Cusps in the Presence of Various Solvents



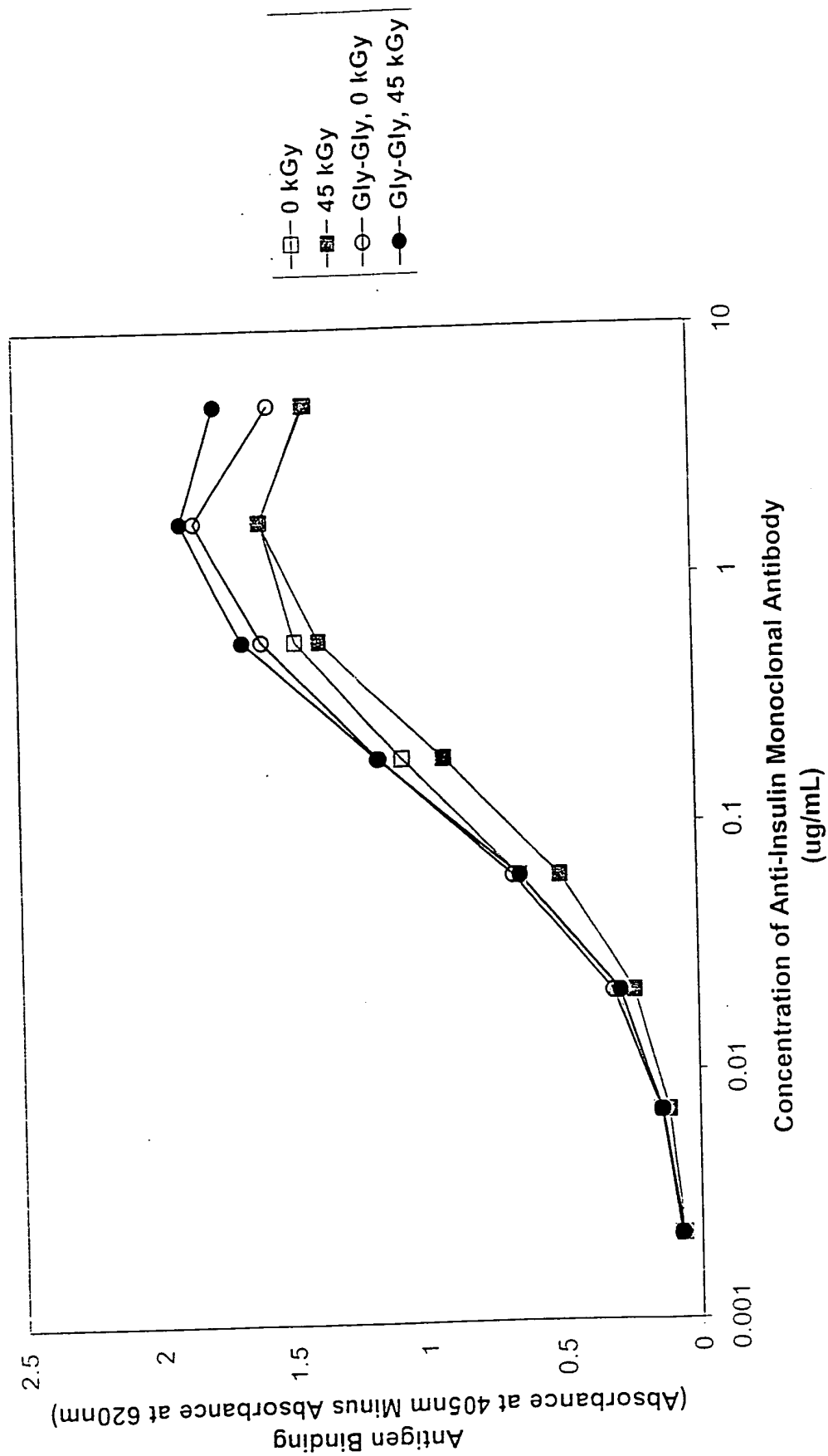
1. Molecular Weight Markers
2. 50% DMSO, 0 kGy
3. 50% DMSO, 45 kGy
4. 50% DMSO and Ascorbate, 0 kGy
5. 50% DMSO and Ascorbate, 45 kGy

205
119
98
52.3
36.8
30.1
22
7.6

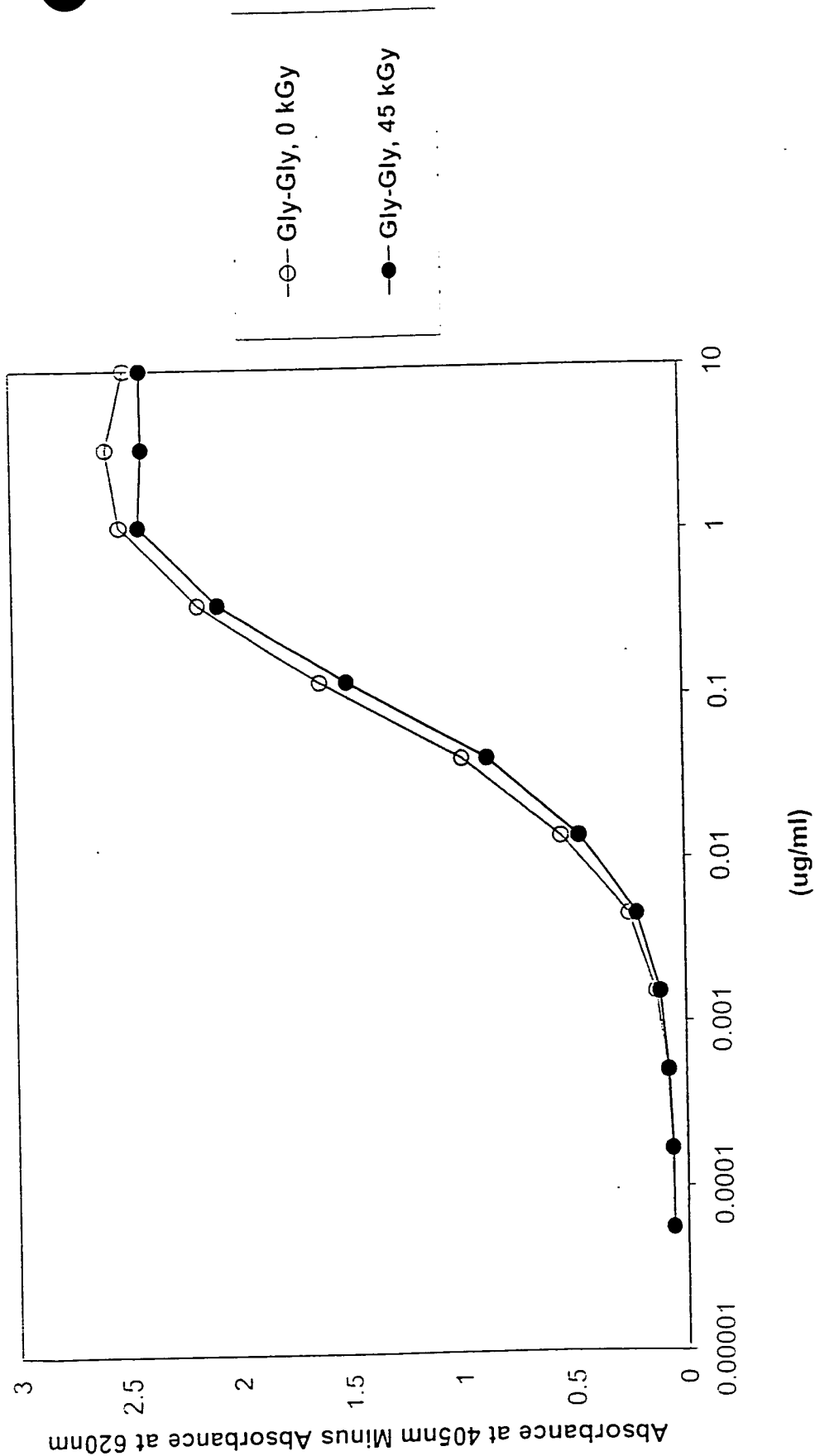
1 2 3 4 5

(7H)

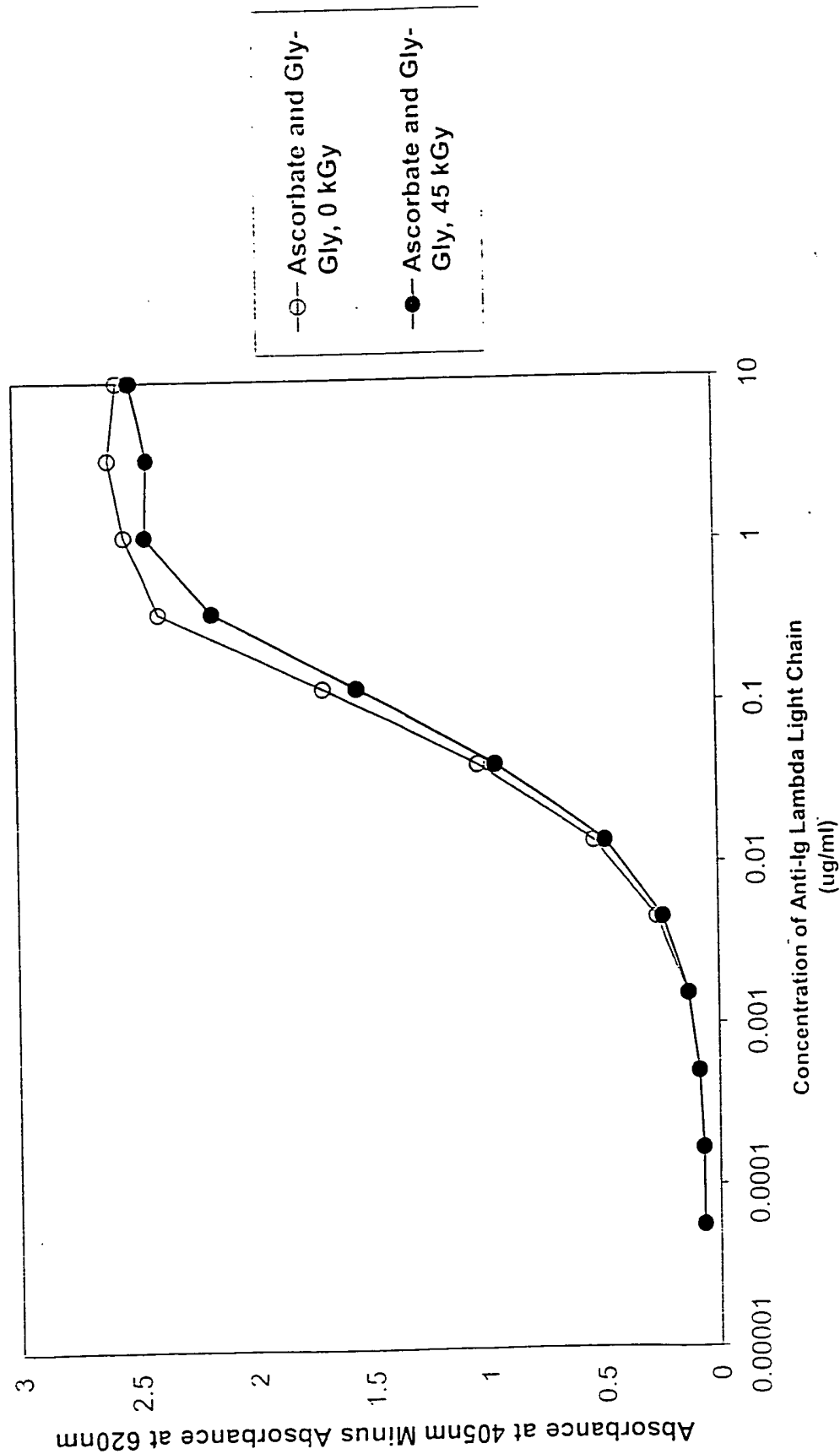
Gamma Irradiation of Freeze-Dried Anti-Insulin Monoclonal Antibody in the Presence or Absence of 20 mM Gly-Gly (1% HSA)



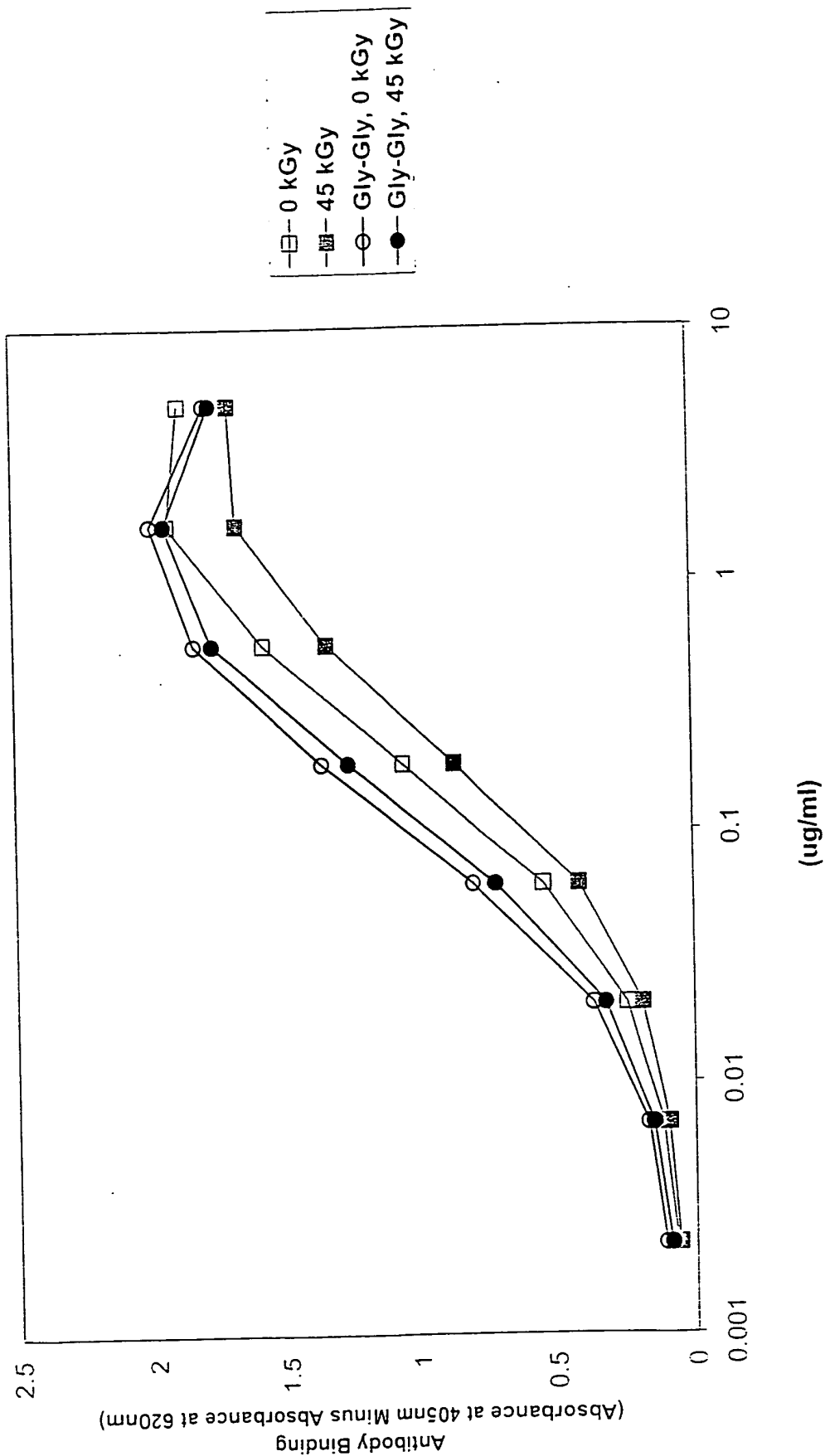
Gamma Irradiation of Freeze-Dried Anti-Human Ig, Lambda Light Chain, in the Presence or Absence of 20 mM Gly-Gly



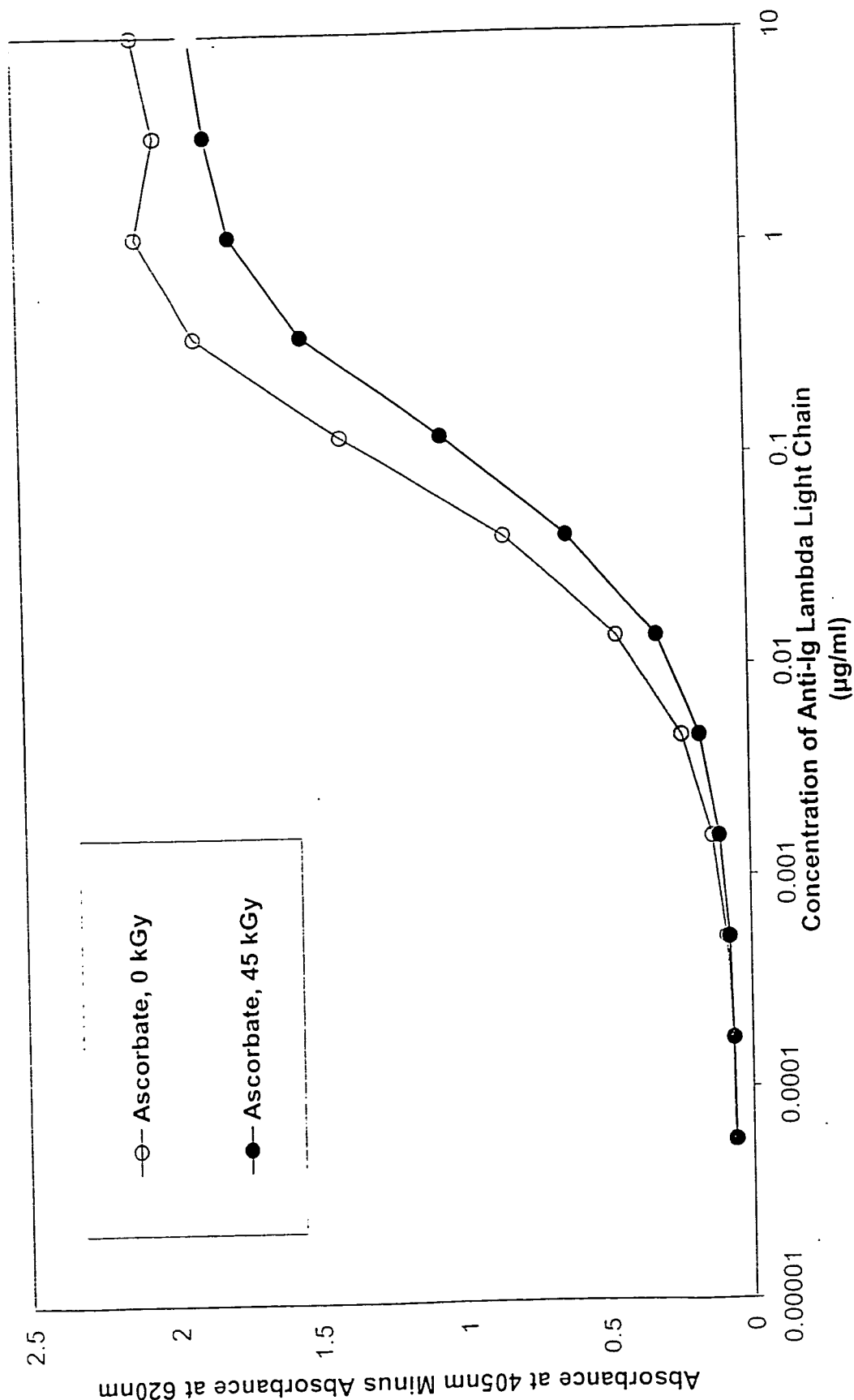
Gamma Irradiation of Freeze-Dried Anti-Human Ig, Lambda Light Chain, in the Presence or Absence of 20 mM Ascorbate and 20 mM Gly-Gly



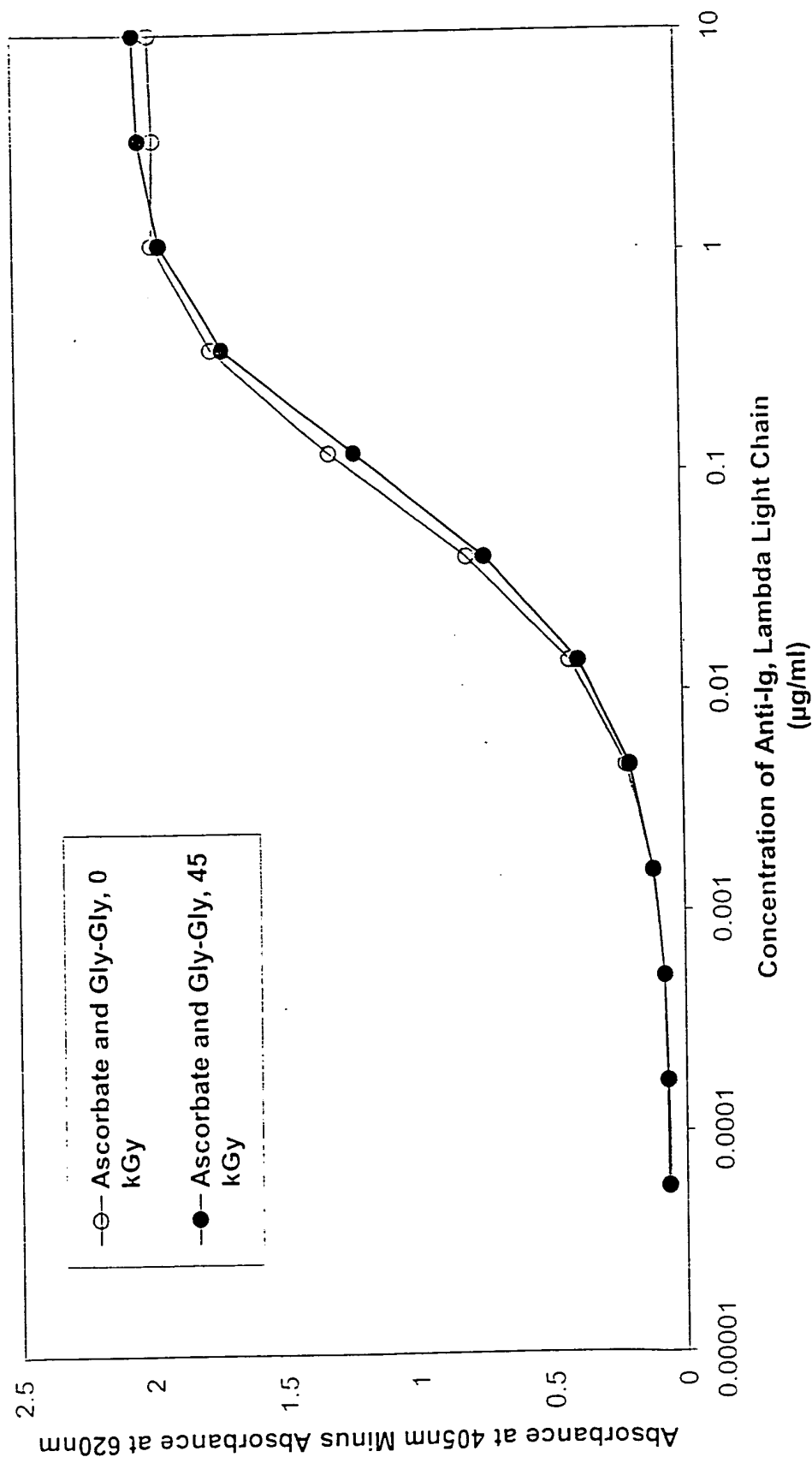
Gamma Irradiation of Freeze-Dried Anti-Insulin Monoclonal Antibody in the Presence or Absence of 20 mM Gly-Gly (and 1% BSA)



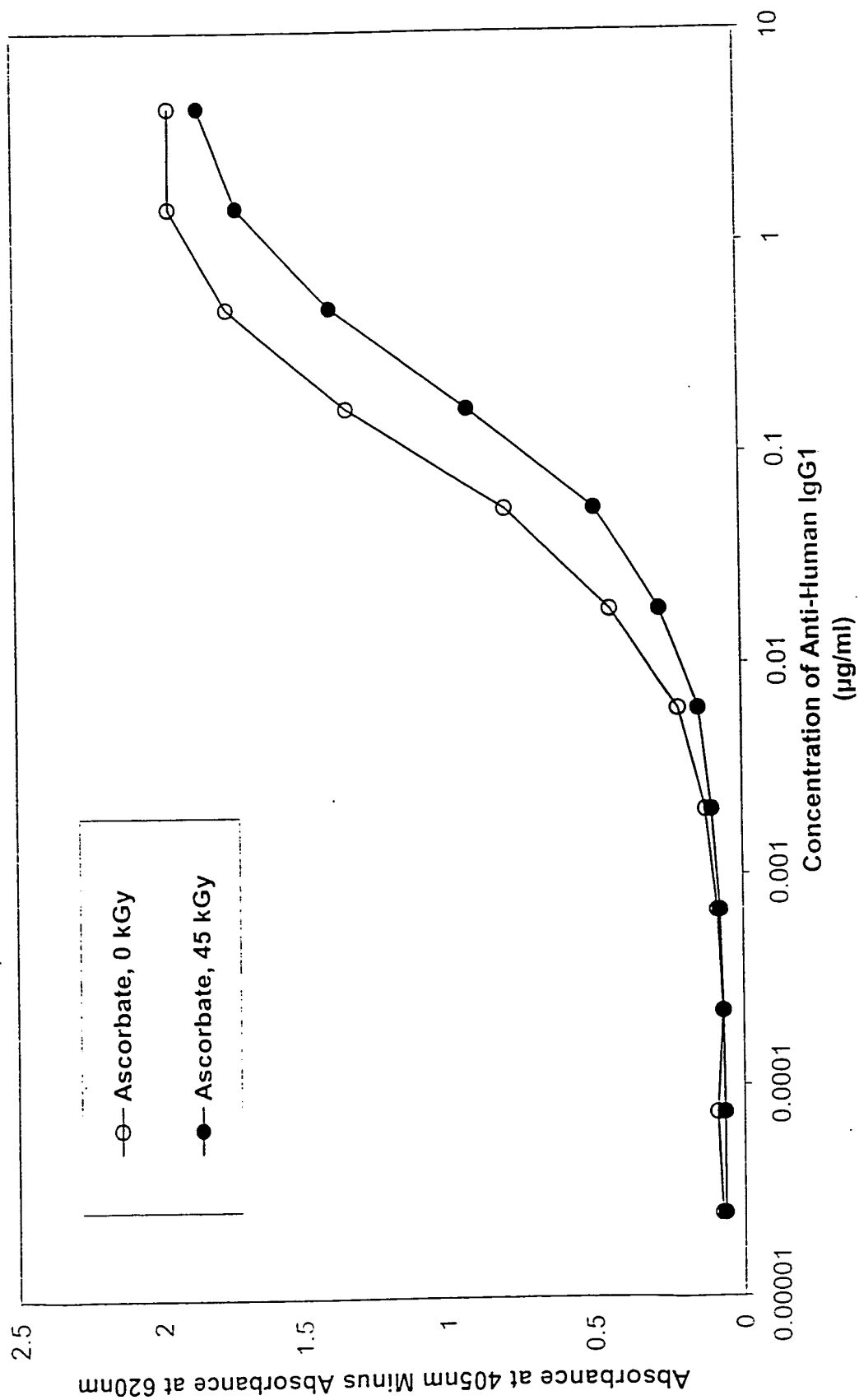
Gamma Irradiation of Liquid Anti-Human Ig, Lambda Light Chain in the Presence or Absence of 200mM Ascorbate



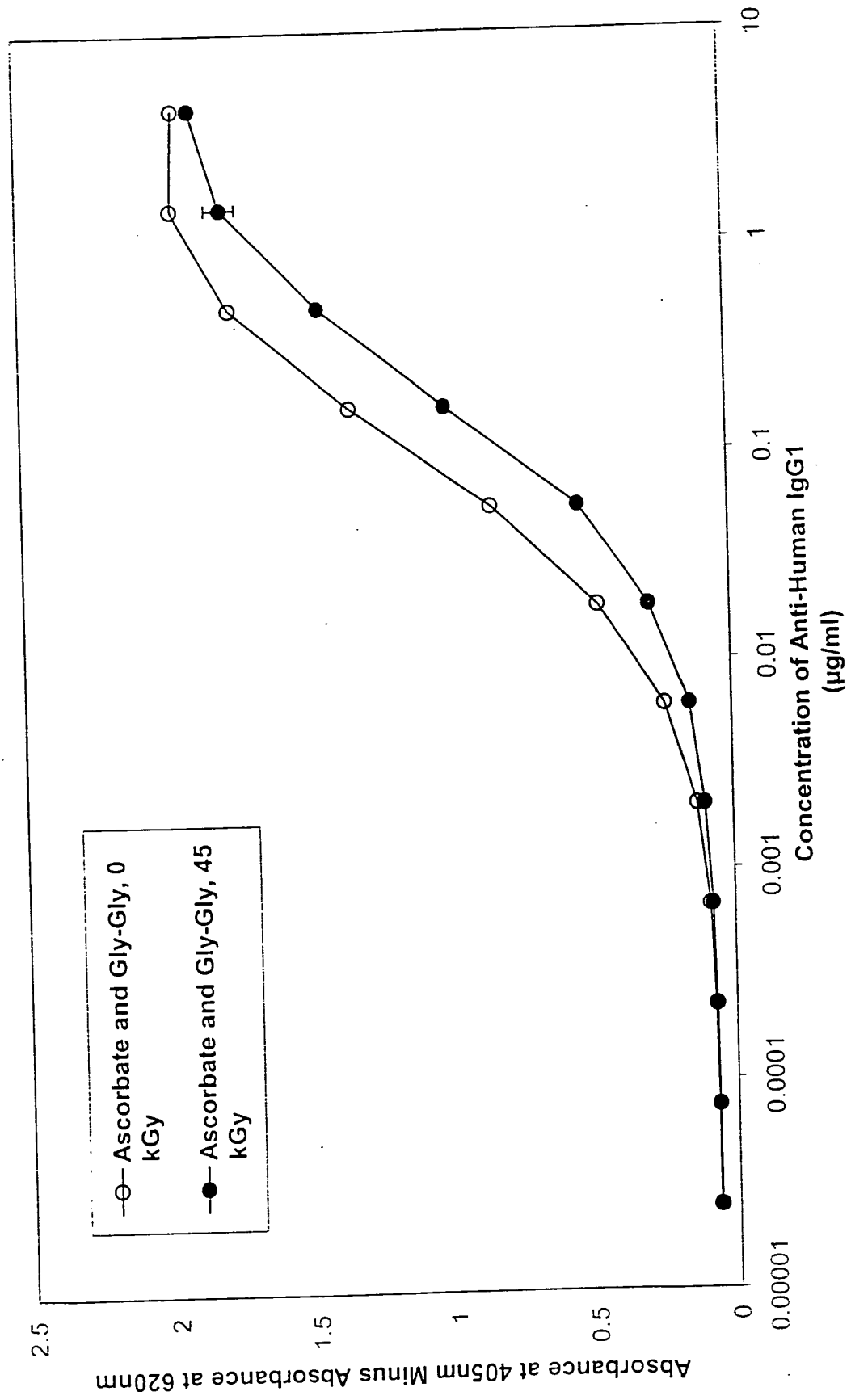
Gamma Irradiation of Liquid Anti-Human Ig, Lambda Light Chain in the Presence or Absence of 200mM Ascorbate and 200mM Gly-Gly



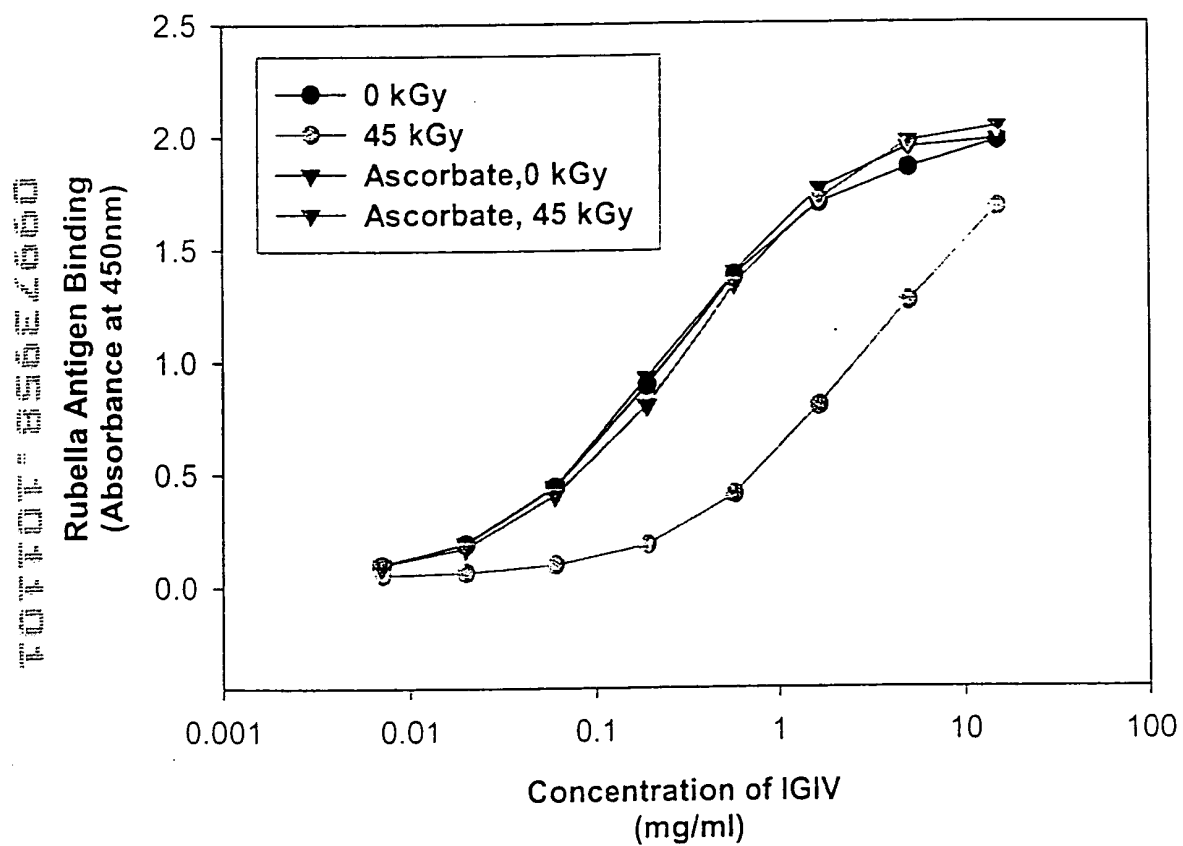
Gamma Irradiation of Liquid Anti-Human IgG1 in the Presence of 200mM Ascorbate



Gamma Irradiation of Liquid Anti-Human IgG1 in the Presence of 200mM Ascorbate and 200mM Gly-Gly

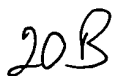


Gamma Irradiation of Liquid
IGIV in the Presence or Absence of 200 mM Ascorbate
Using Rubella IgG Assay

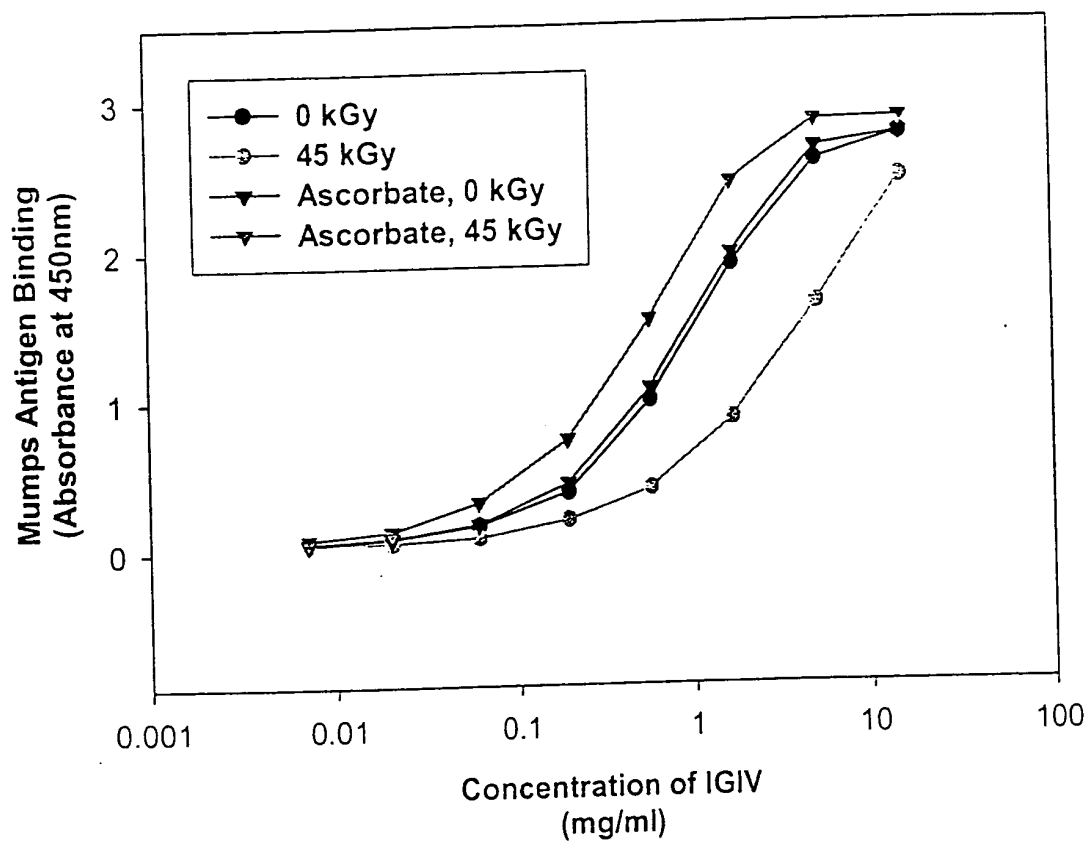


20A

THE UNIVERSITY OF CHICAGO

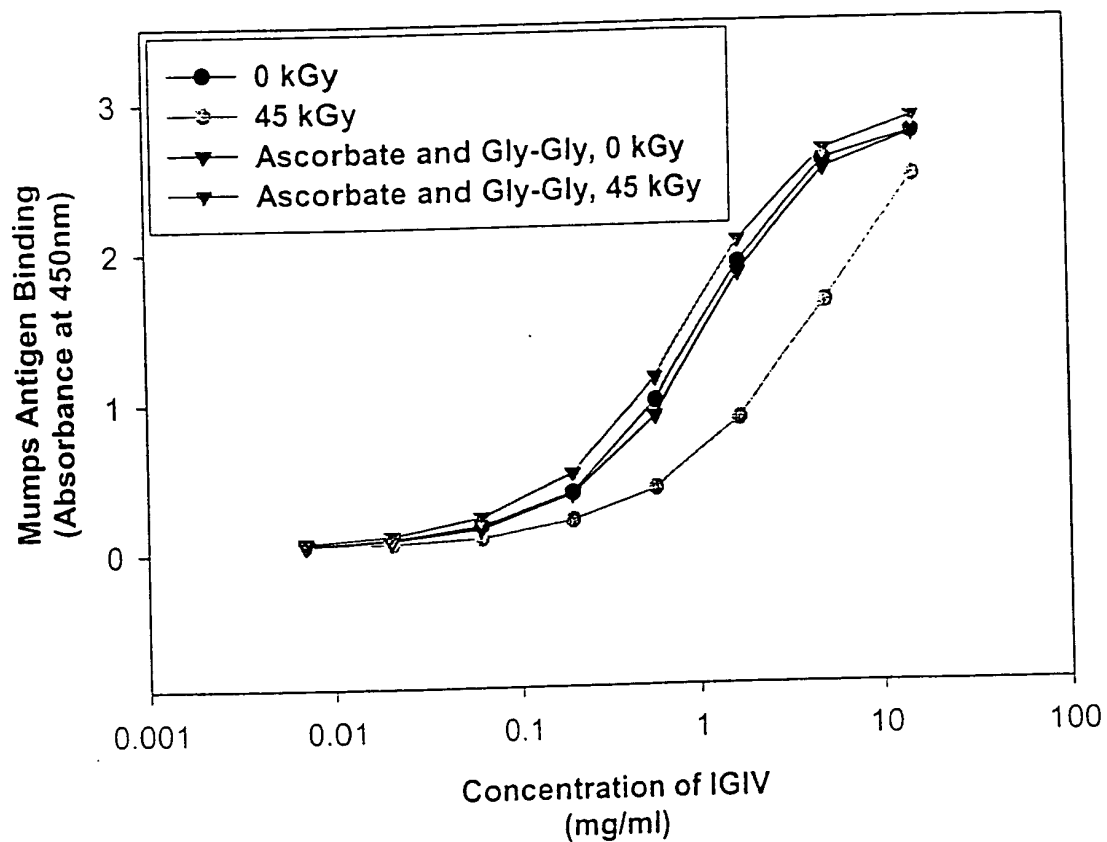


Gamma Irradiation of Liquid IGIV in the Presence or Absence of 200 mM Ascorbate Using Mumps Assay



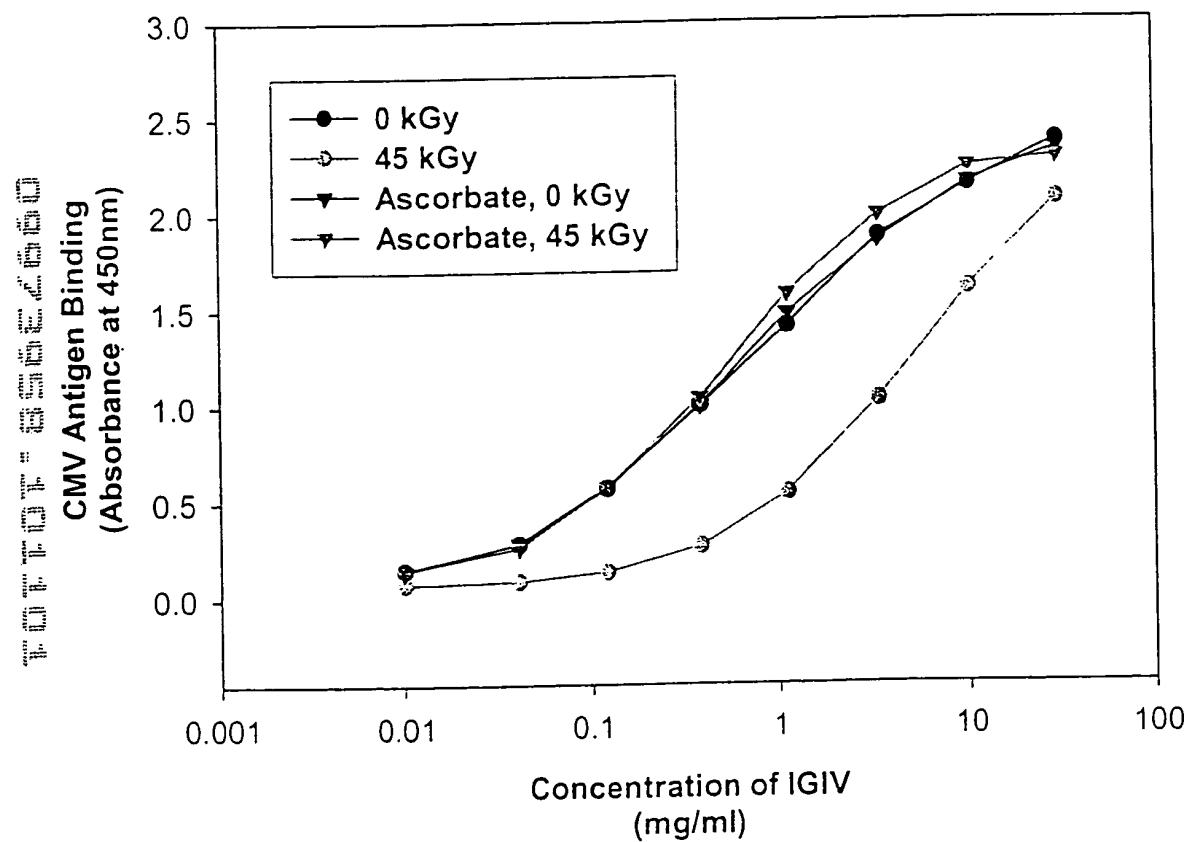
20C

Gamma Irradiation of Liquid IGIV in the Presence or Absence of 200 mM Ascorbate and 200 mM Gly-Gly Using Mumps Assay



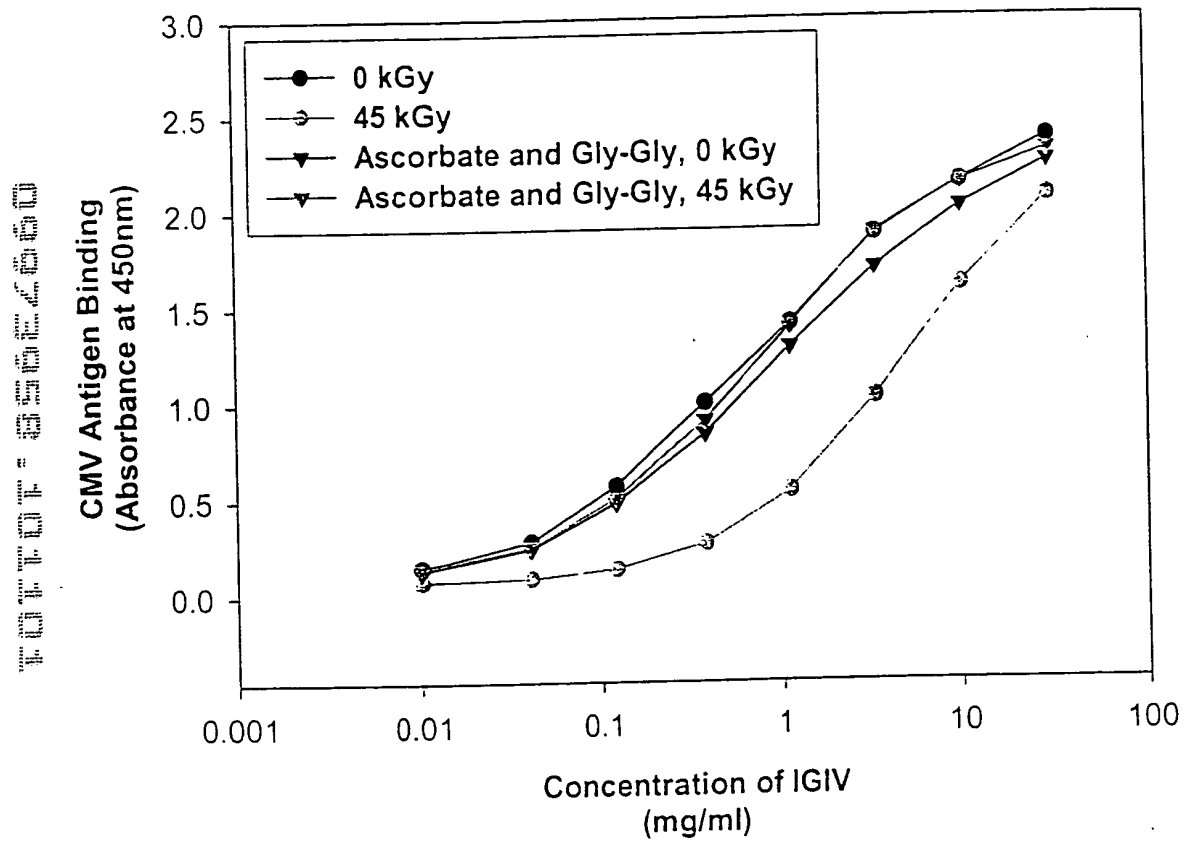
20D

Gamma Irradiation of Liquid
IGIV in the Presence or Absence of 200 mM Ascorbate
Using CMV Assay



20E

Gamma Irradiation of Liquid IGIV in the Presence or Absence of 200 mM Ascorbate and 200 mM Gly-Gly Using CMV Assay

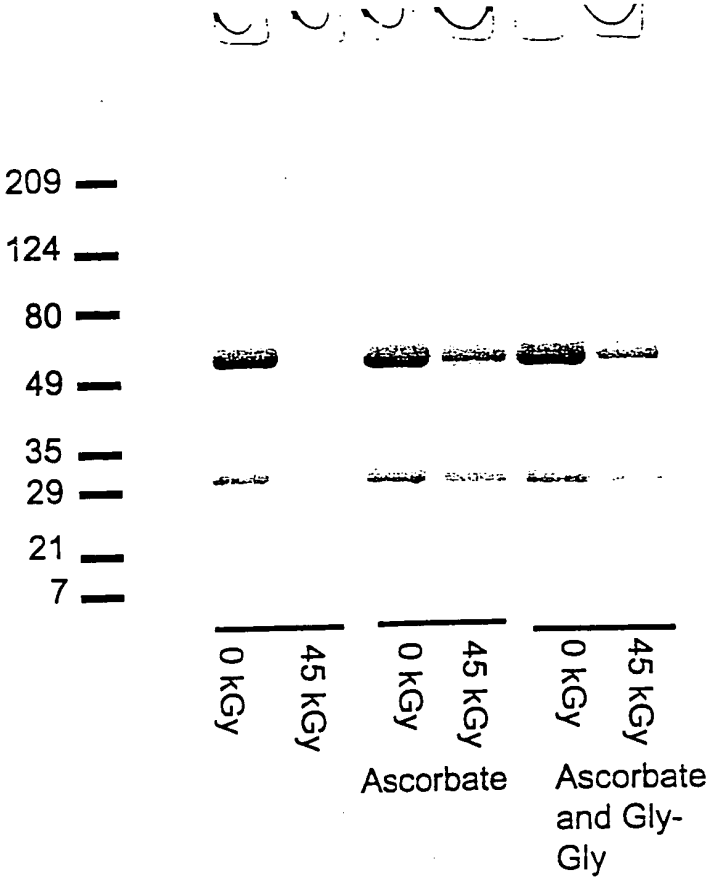


20F

SDS-PAGE of

Liquid IGIV

Liquid IGIV, Reduced 5-15%

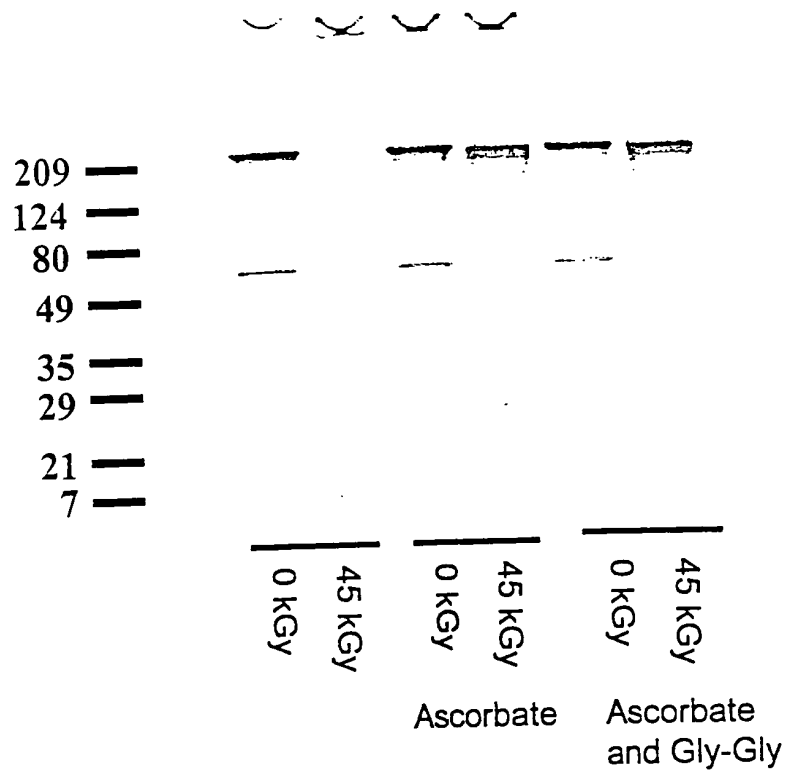


206

SDS-PAGE of

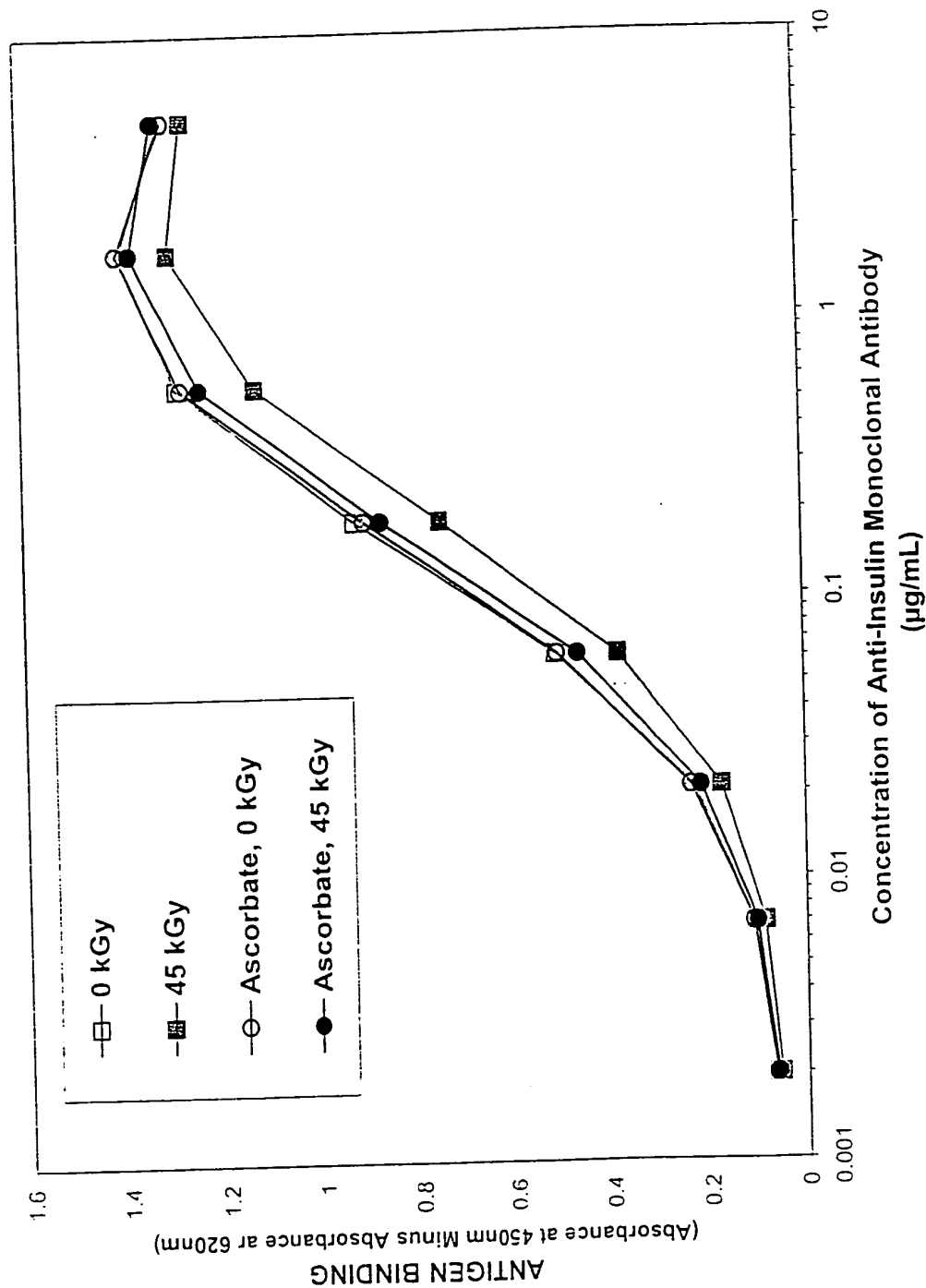
Liquid IGIV

Liquid IGIV, Non-Reduced 5-15%



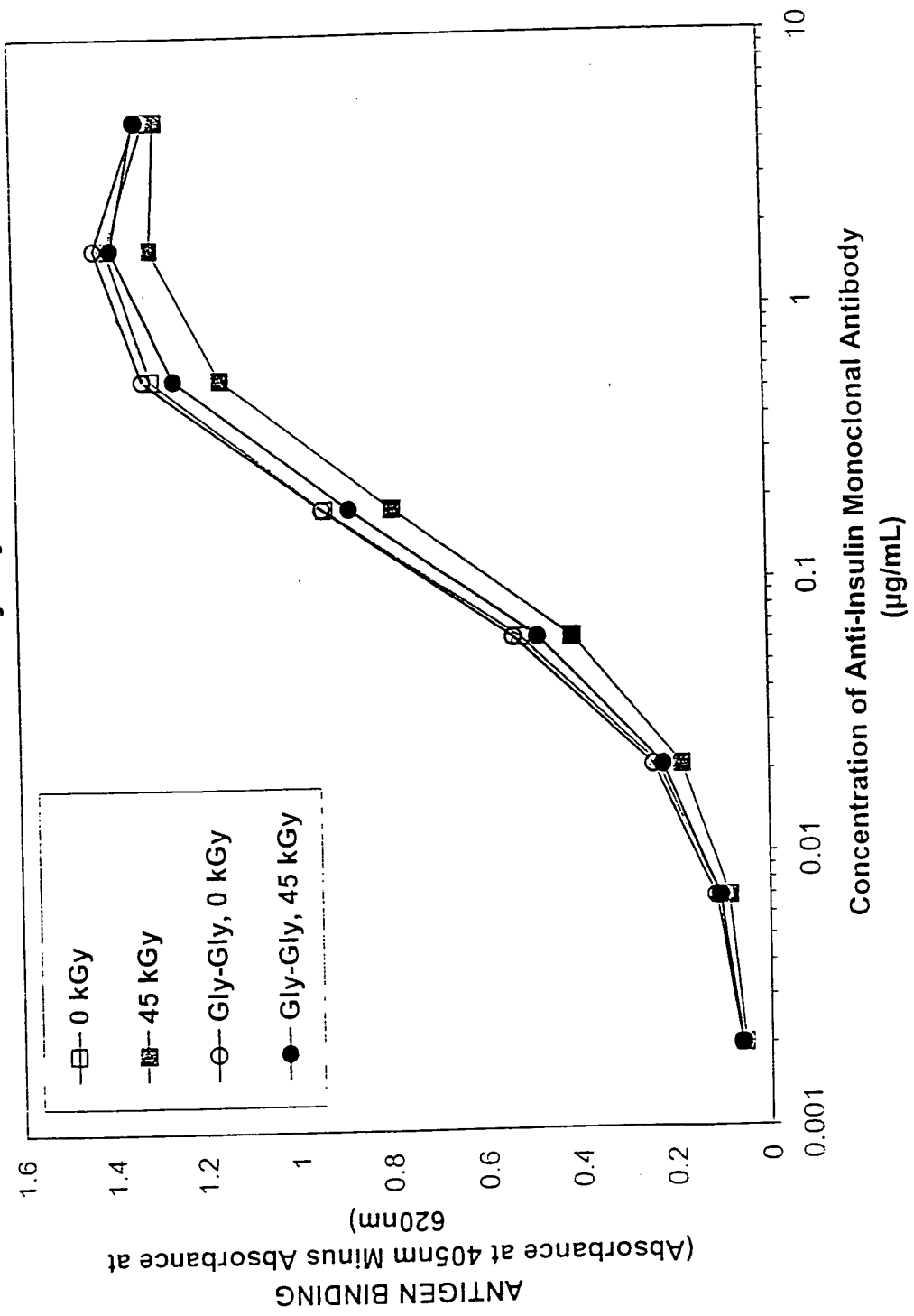
20H

Antigen Binding of Freeze-Dried Anti-Insulin Monoclonal Antibody at a High Dose Rate (30 kGy/h) in the Presence or Absence of 20 mM Ascorbate

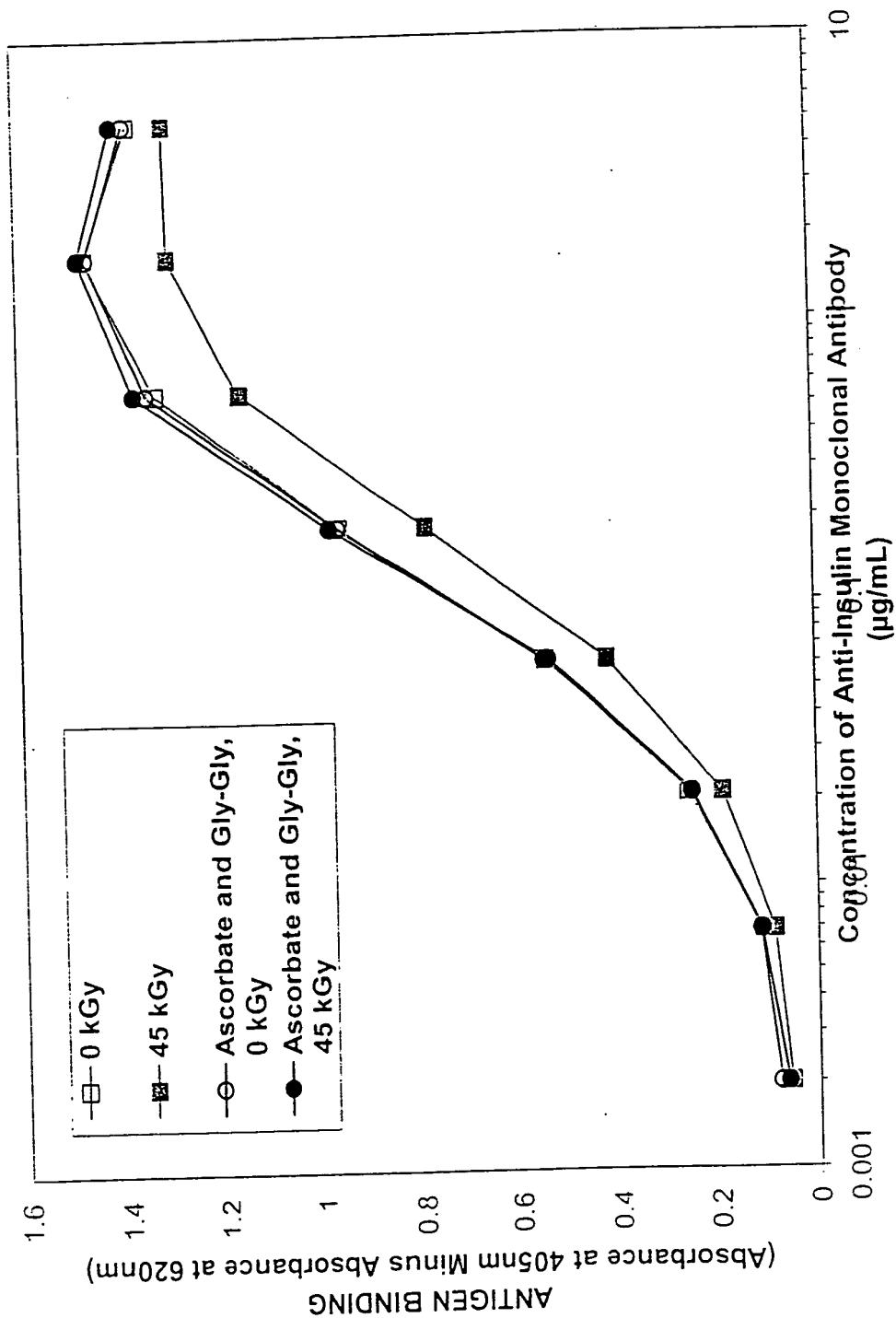


Antibody at a High Dose Rate (30 kGy/h) in the Presence or Absence of 20 mM Gly-Gly

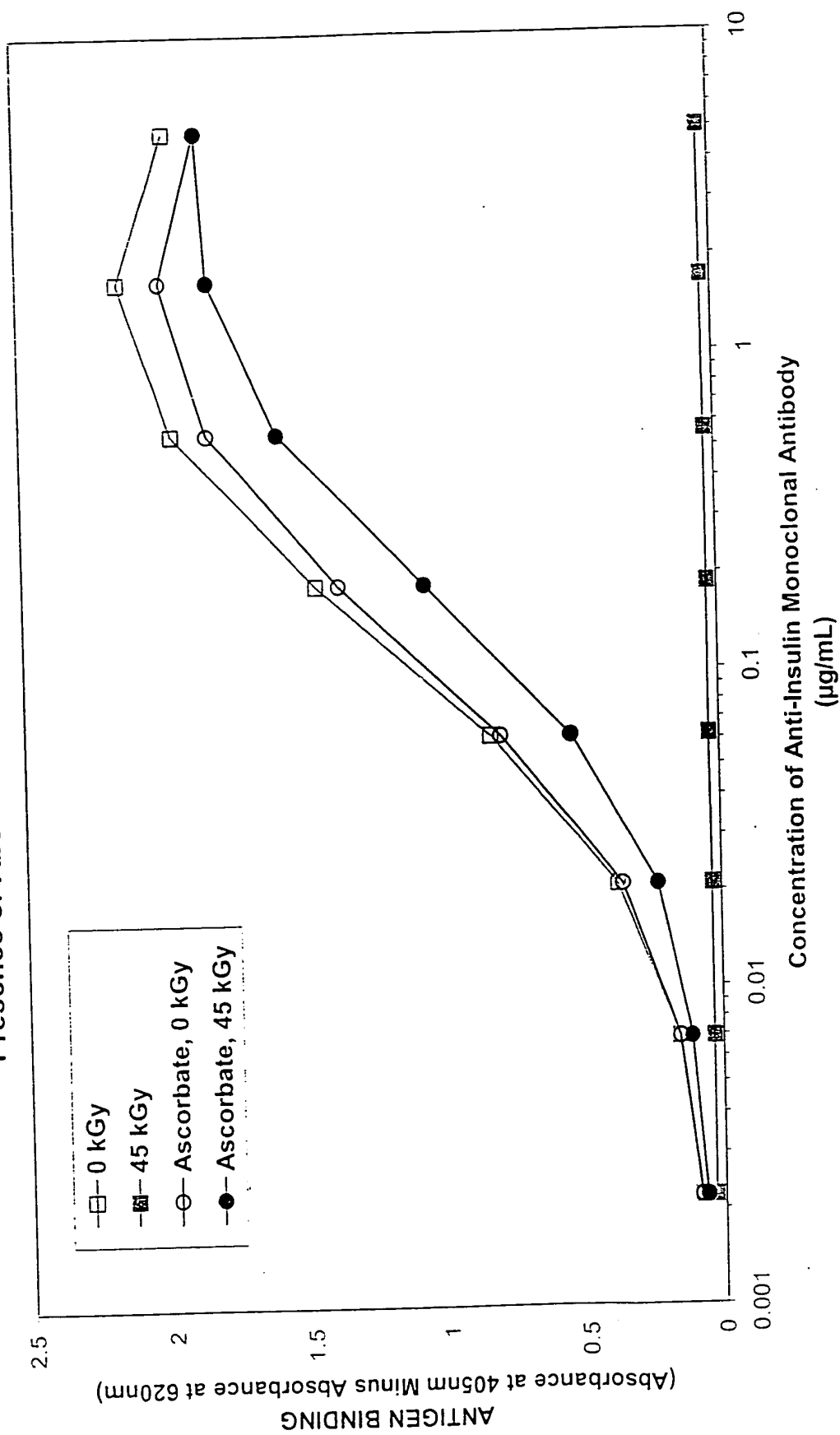
Gamma Irradiation of Freeze-Dried Anti-Insulin Monoclonal



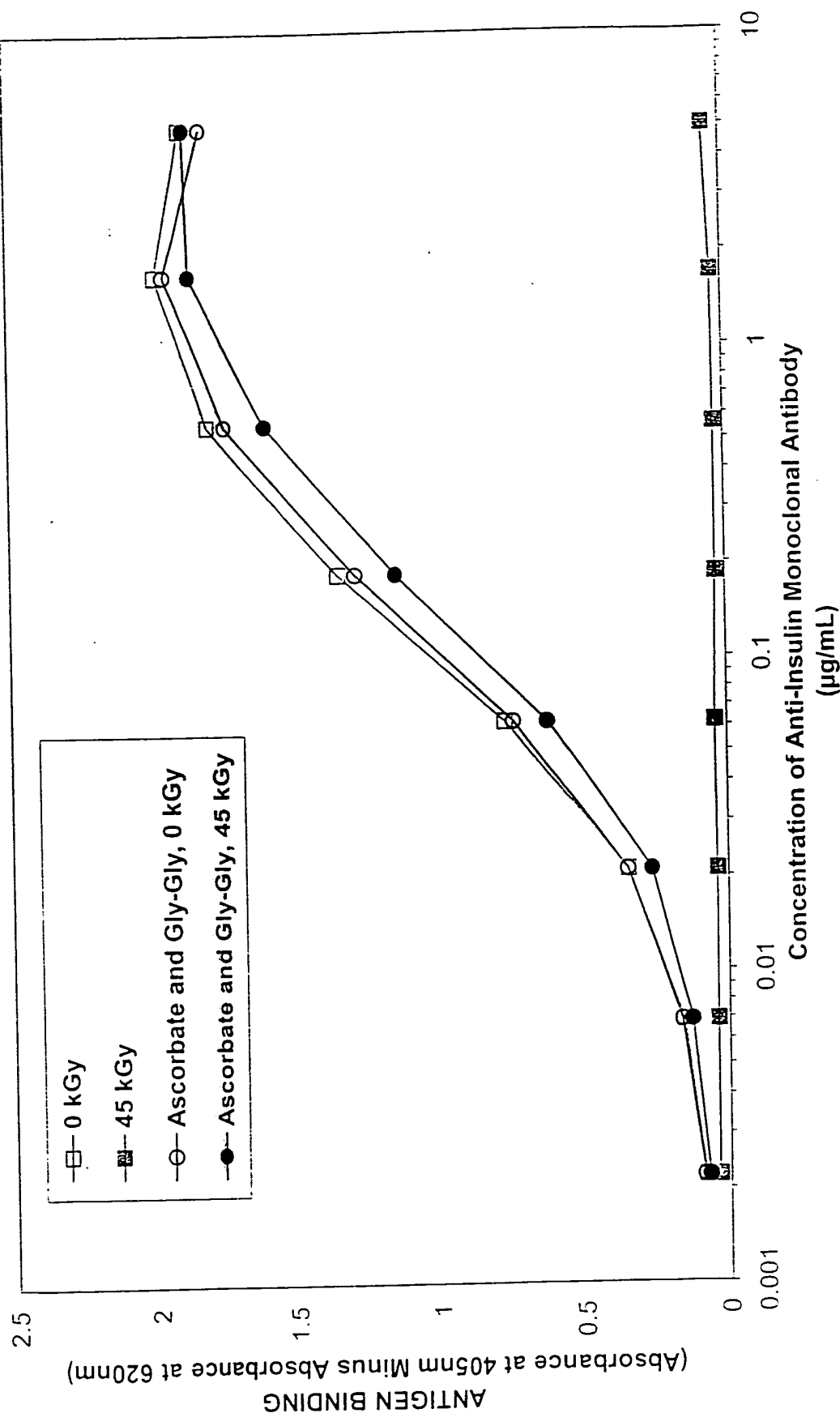
Gamma Irradiation of Freeze-Dried Anti-Insulin Monoclonal Antibody at a High Dose Rate 30 kGy/h in the Presence or Absence of 20 mM Ascorbate and 20 mM Gly-Gly



Gamma Irradiation of Anti-Insulin Monoclonal Antibody in the Presence or Absence of 200 mM Ascorbate



Gamma Irradiation of Anti-Insulin Monoclonal Antibody in the Presence or Absence of 200 mM Ascorbate and 200 mM Gly-Gly

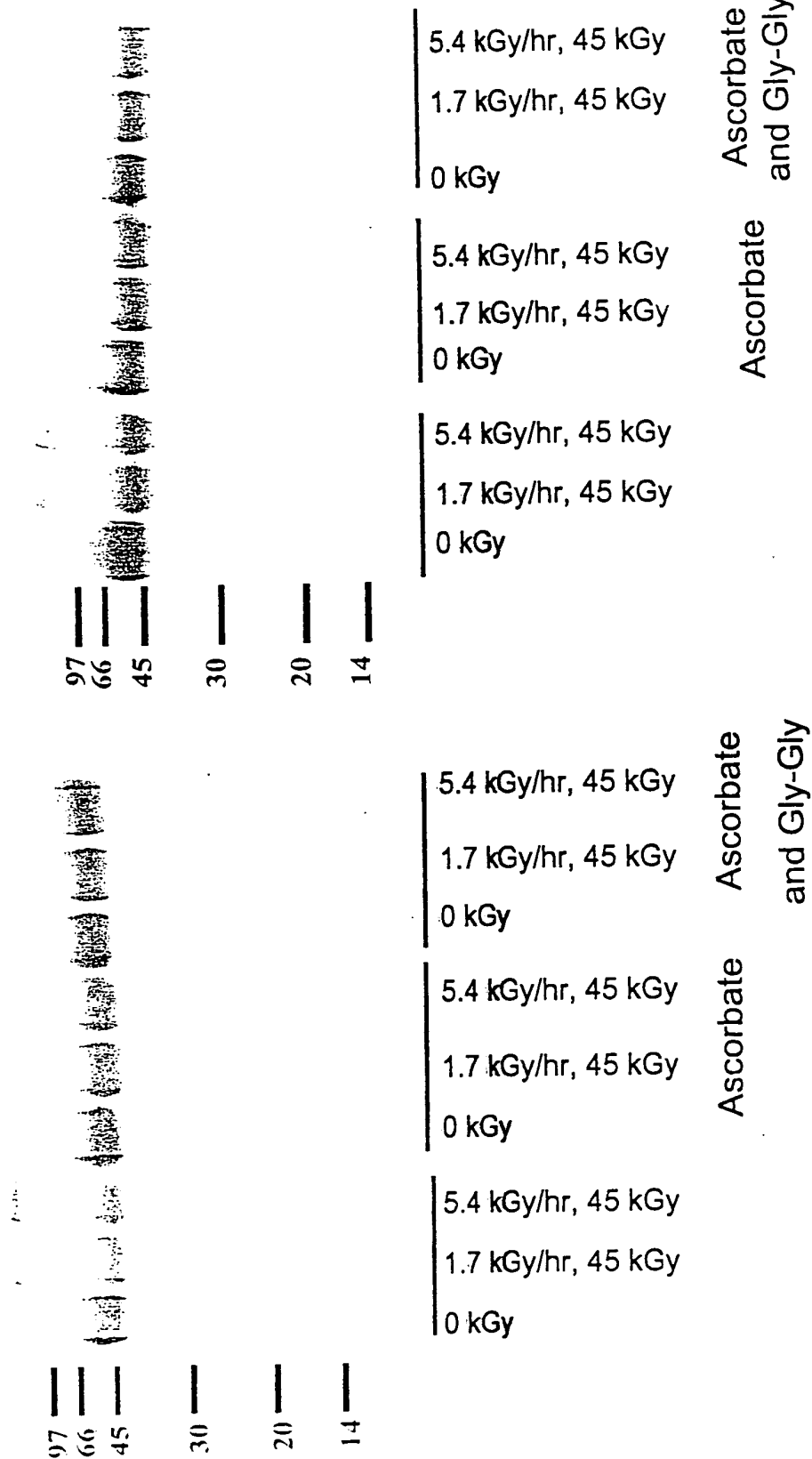


22B

TDTOT 356260
SDS-PAGE for a Glycosidase

Nonreduced

Reduced

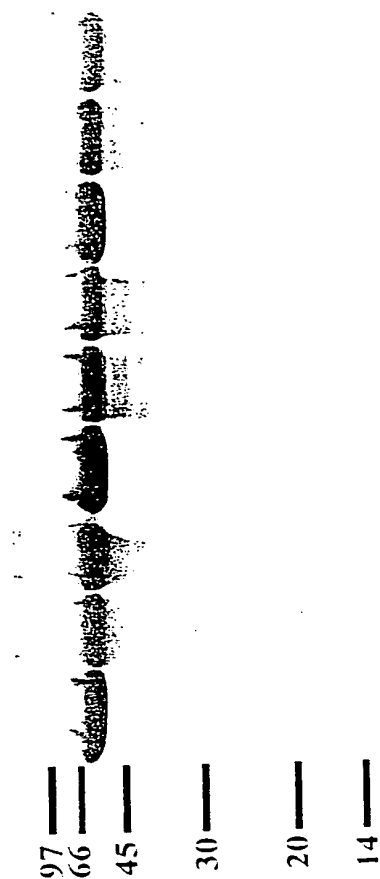


23A

10101-3364650

SDS-PAGE for a Sulfatase

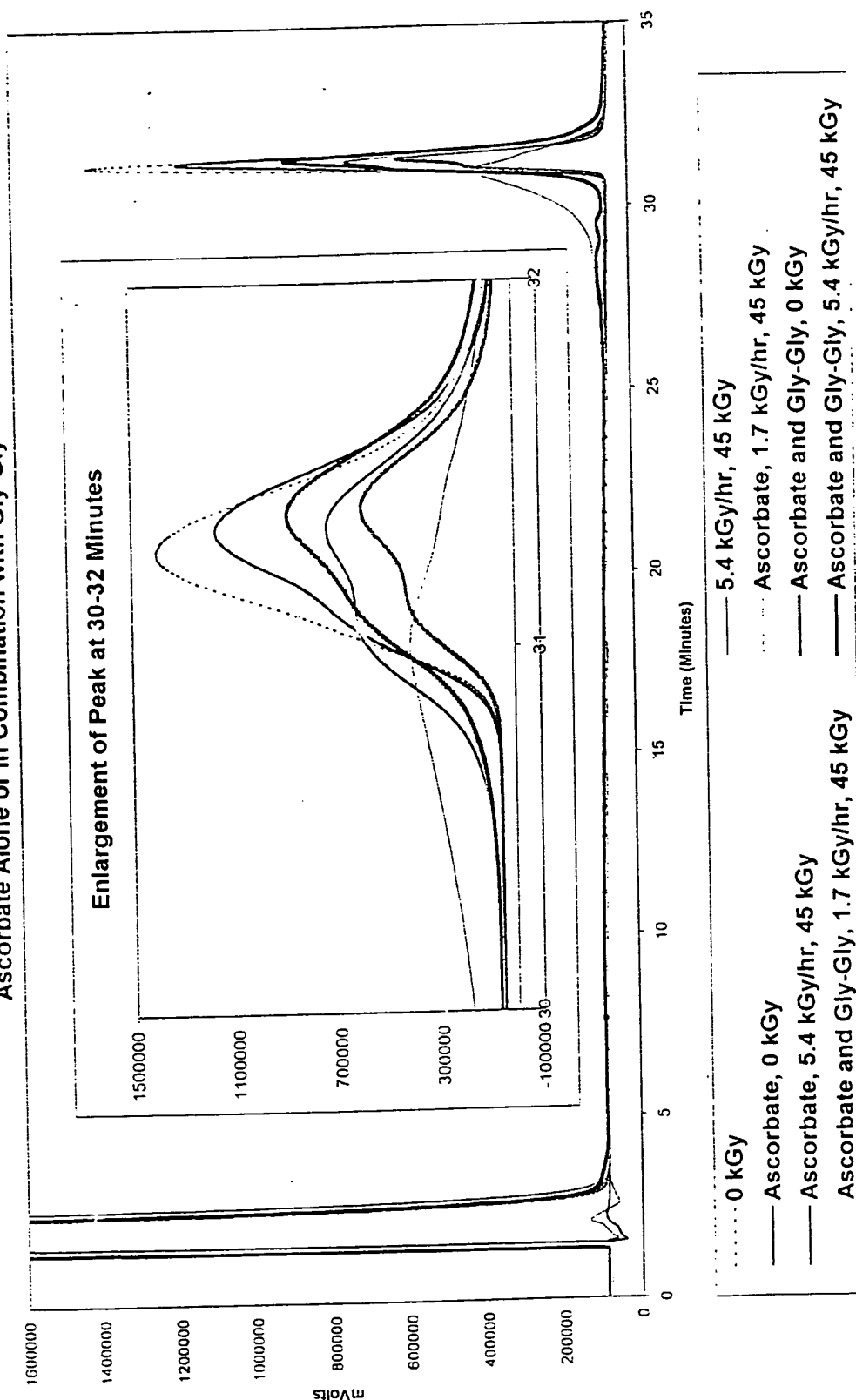
Reduced



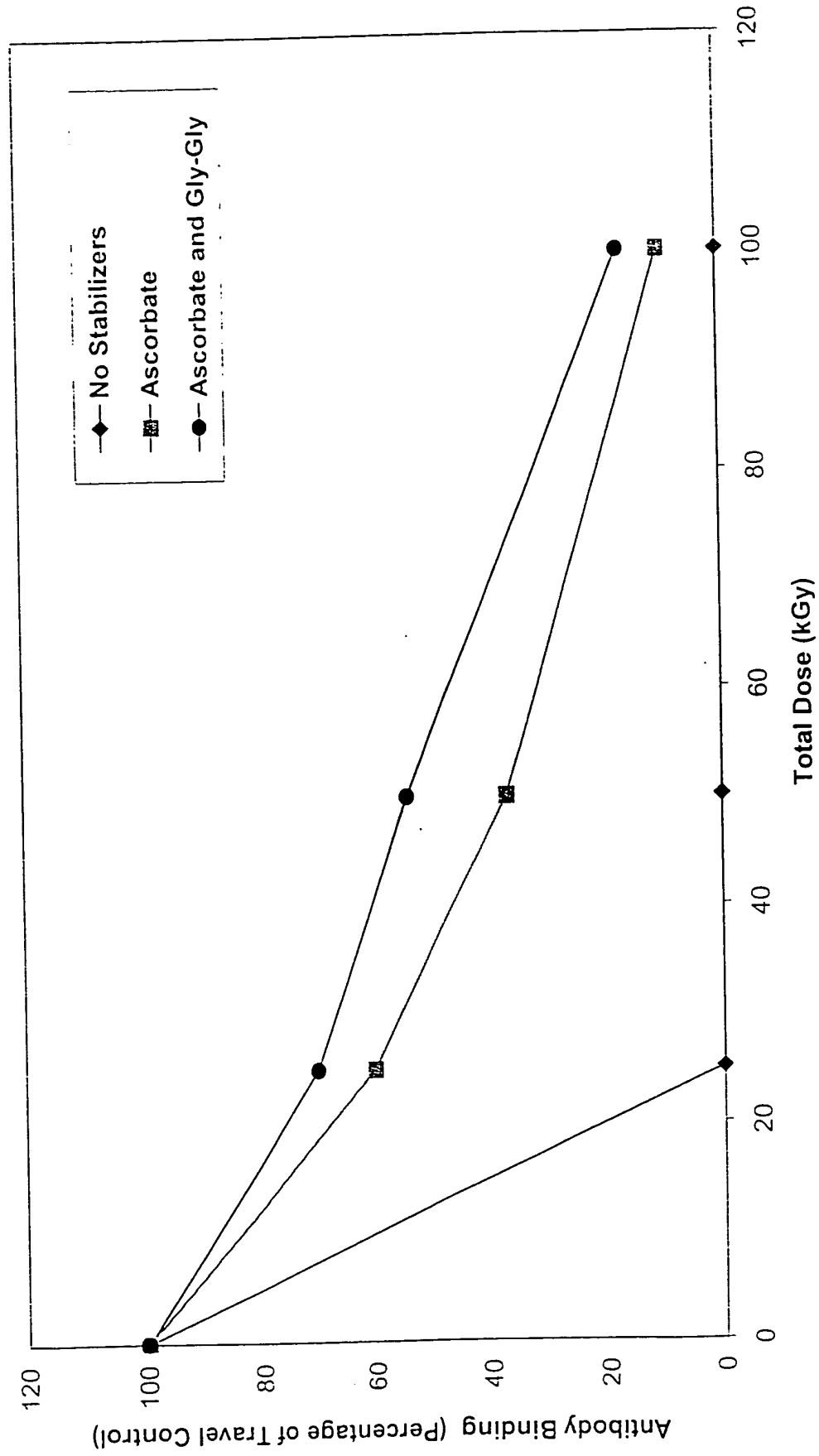
5.4 kGy/hr, 45 kGy	Ascorbate and Gly-Gly
1.7 kGy/hr, 445 kGy	
0 kGy	
5.4 kGy/hr, 45 kGy	Ascorbate
1.7 kGy/hr, 45 kGy	
0 kGy	

23B

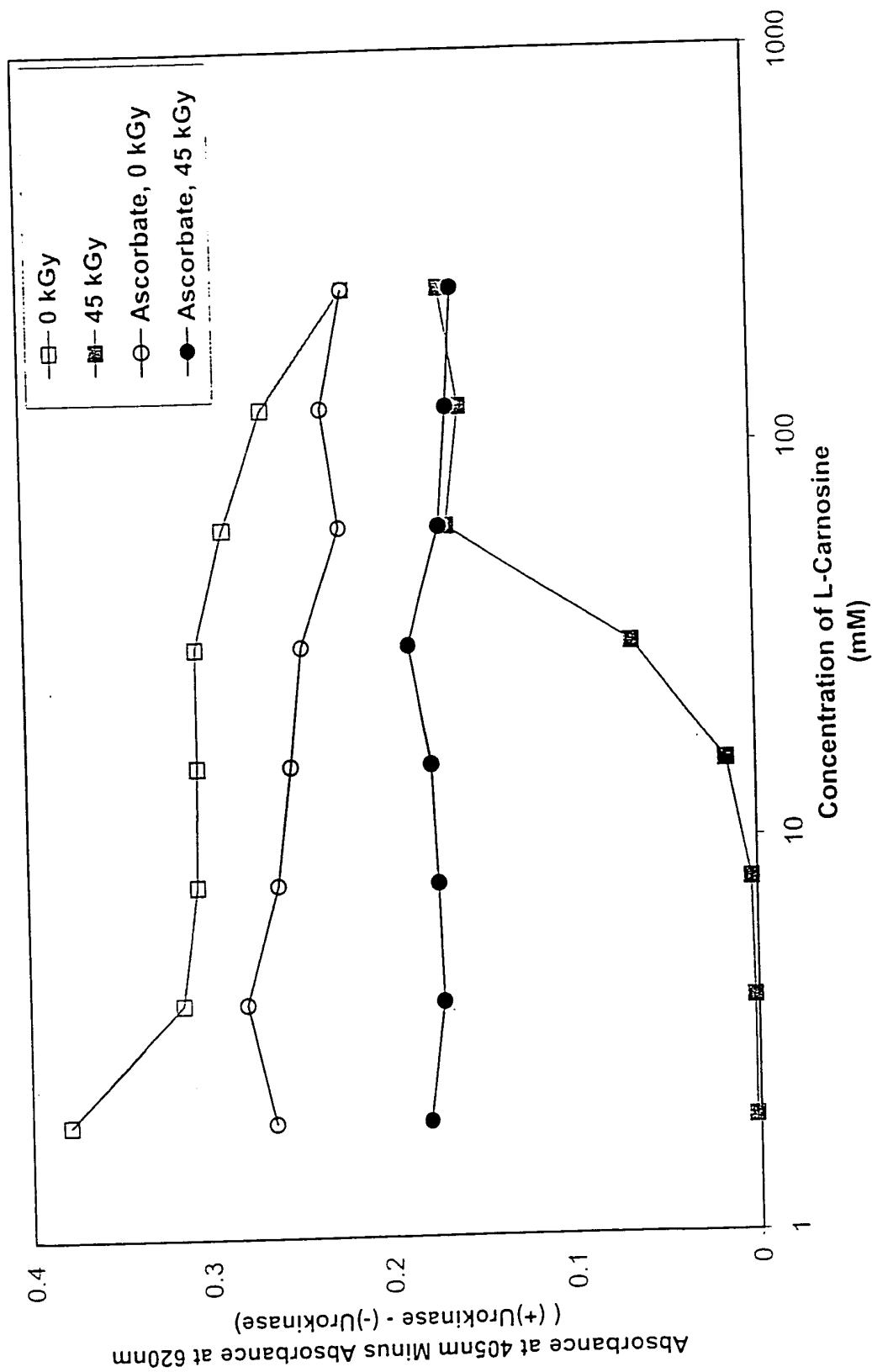
Gamma Irradiation of a Glycosidase In the Presence or Absence of Ascorbate Alone or In Combination with Gly-Gly



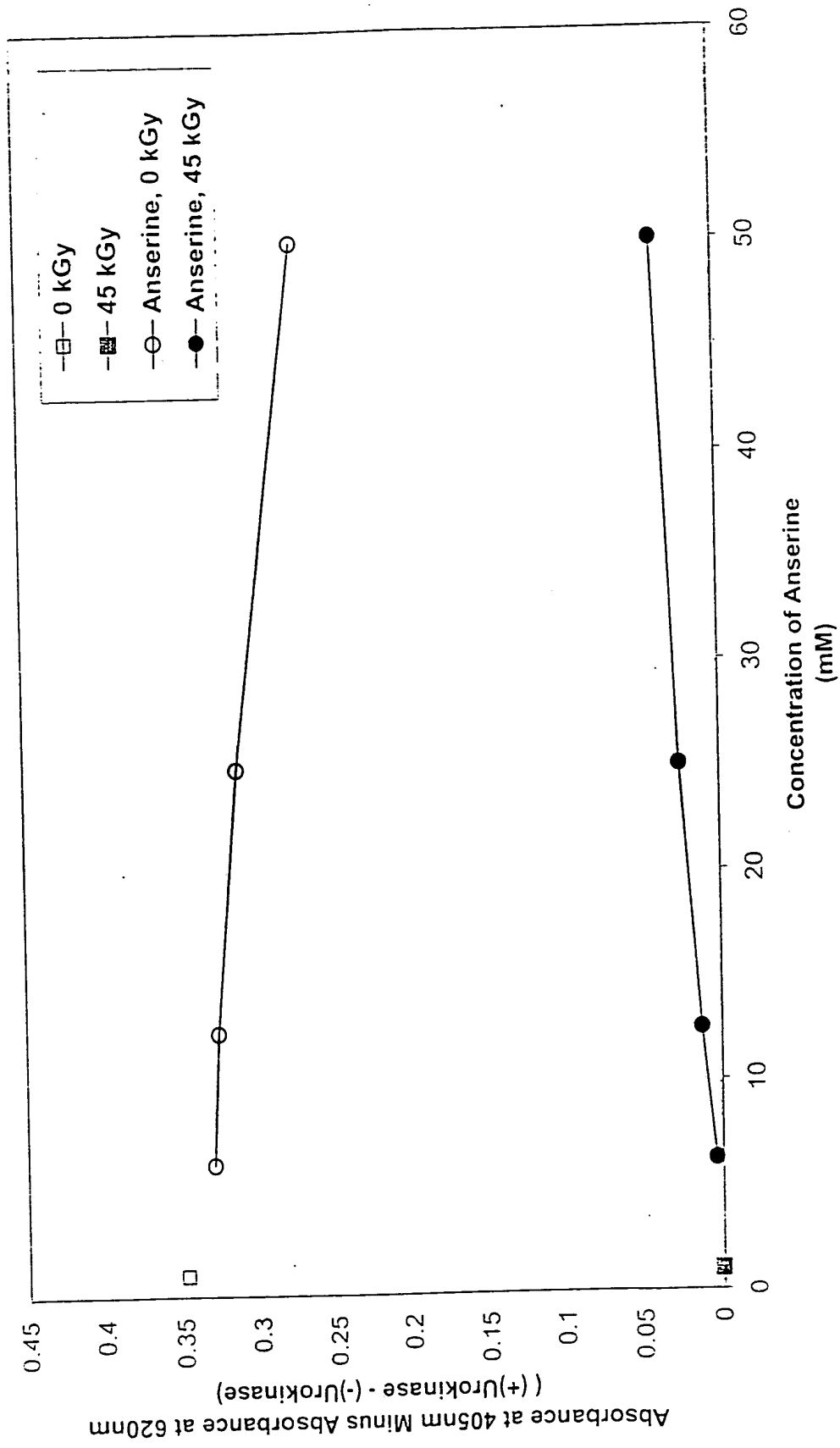
Gamma Irradiation of Liquid Anti-Insulin Monoclonal Antibody in the Presence or Absence of 200 mM Ascorbate Alone or in Combination With 200 mM Gly-Gly



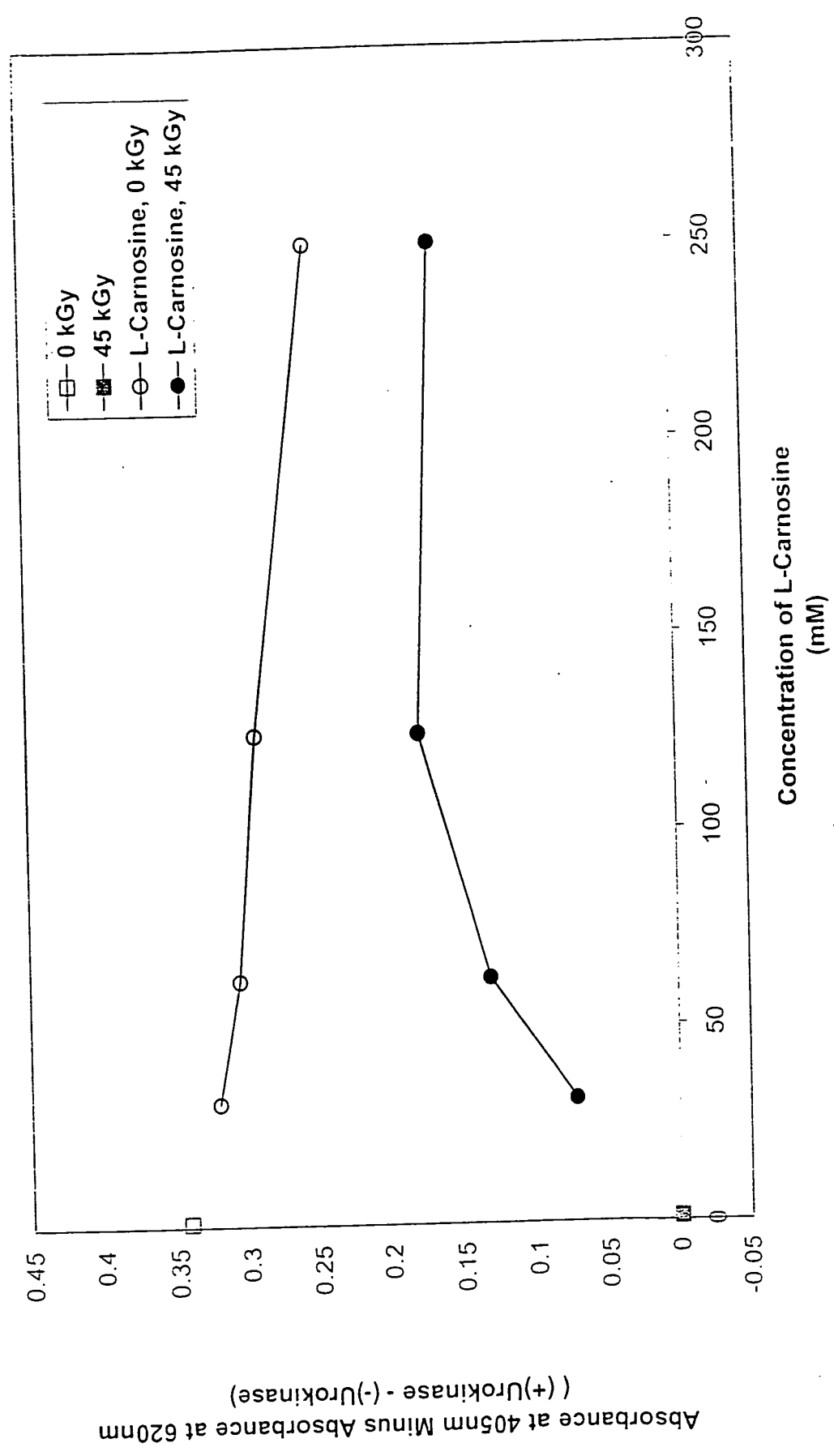
Gamma Irradiation of Liquid Urokinase, With L-Carnosine, at 45 kGy in the Presence or Absence of 50mM Ascorbate



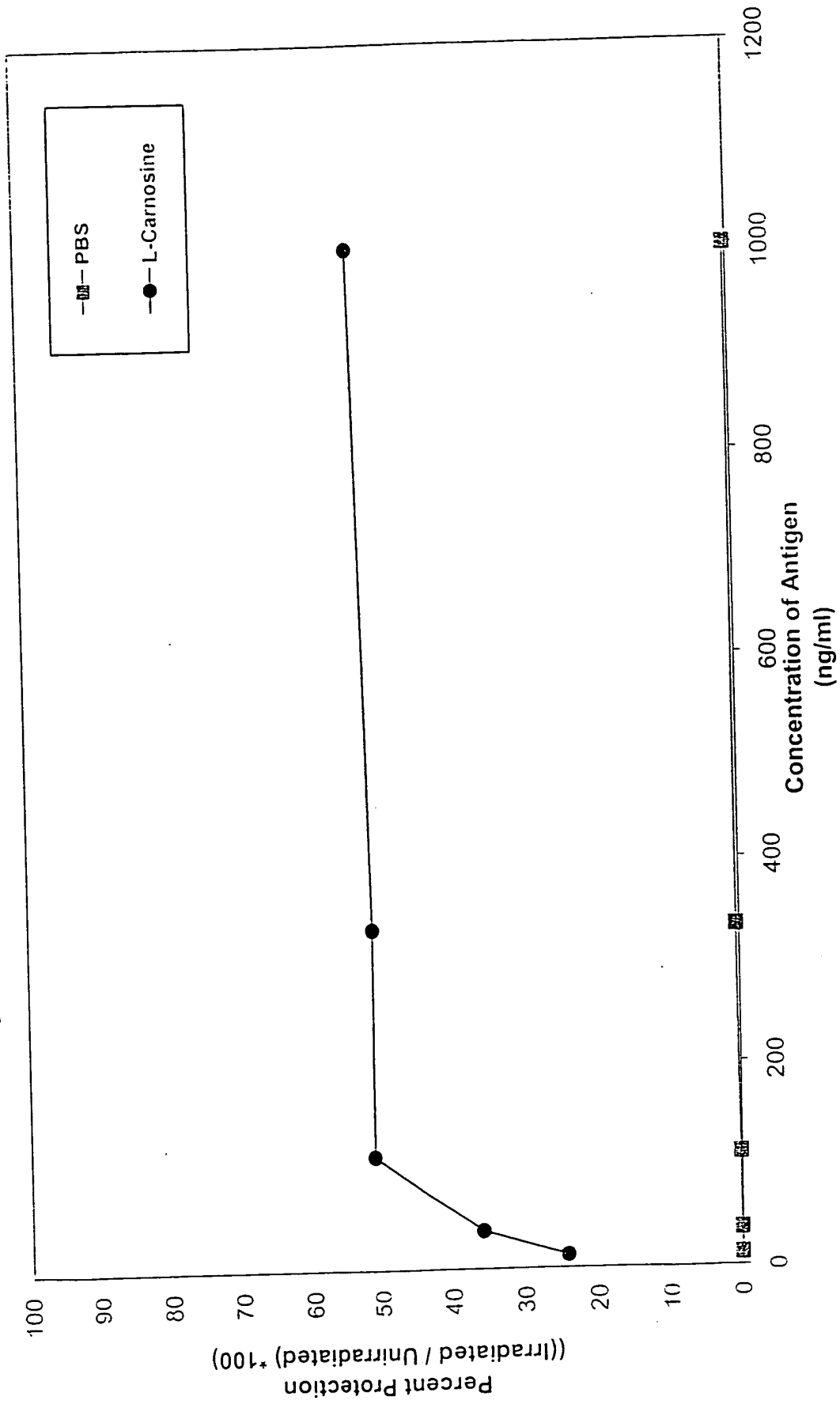
Gamma Irradiation of Liquid Urokinase in the Presence or Absence of Anserine



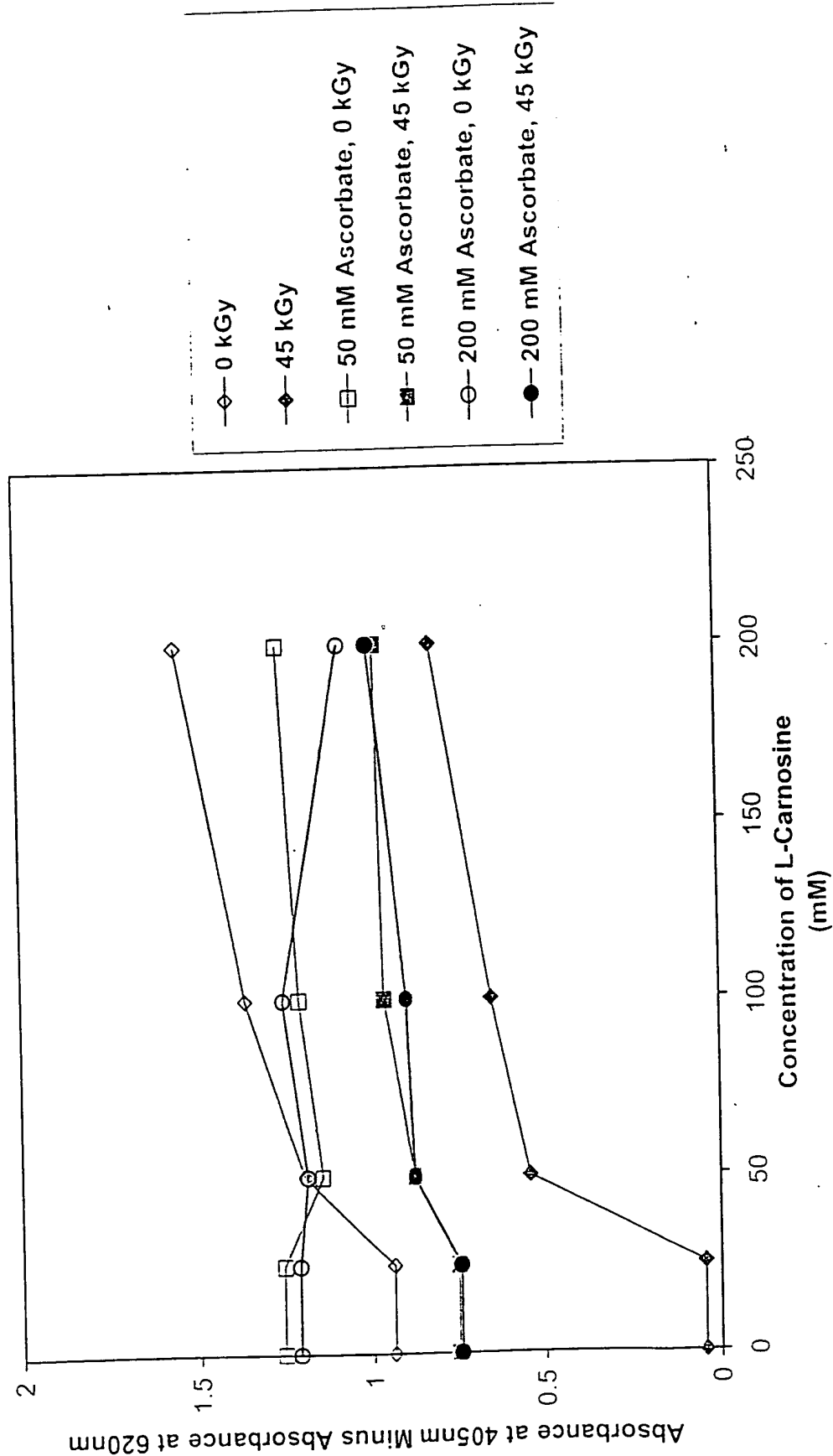
Gamma Irradiation of Liquid Urokinase in the Presence or Absence of L-Carnosine



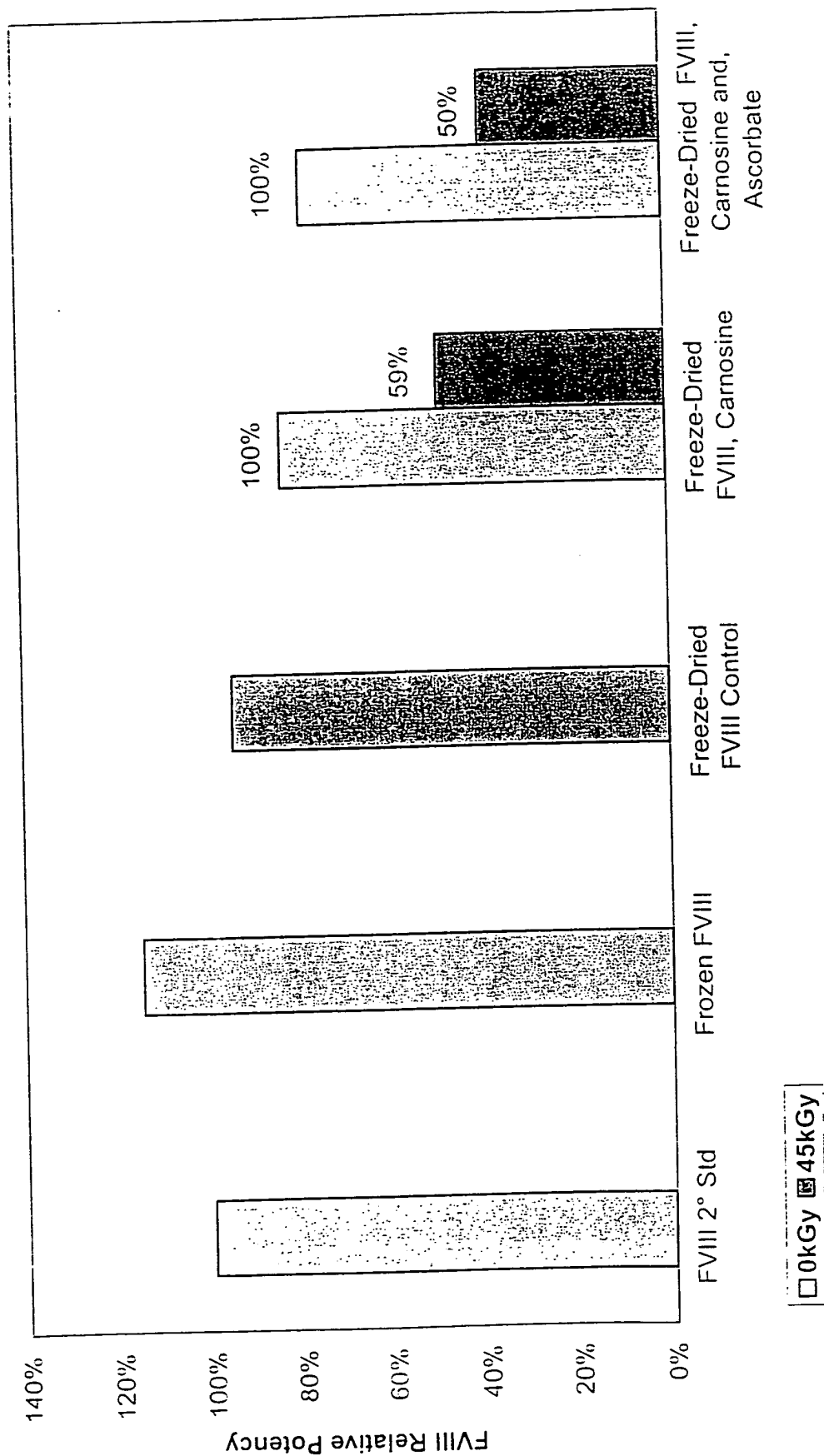
Gamma Irradiation of Immobilized Anti-Insulin Monoclonal Antibody, to 45 kGy, in the Presence or Absence of 100 mM L-Carnosine



Gamma Irradiation of Immobilized Monoclonal Antibody in the Presence or Absence of L-Carnosine and Ascorbate

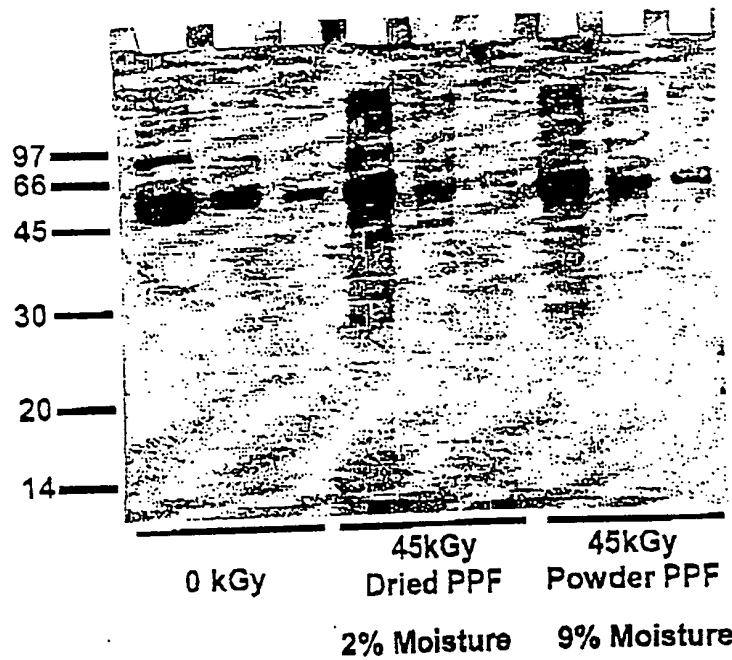


Gamma Irradiation of Freeze-Dried FVIII in the Presence or Absence of L-Carnosine Alone or in Combination with Ascorbate

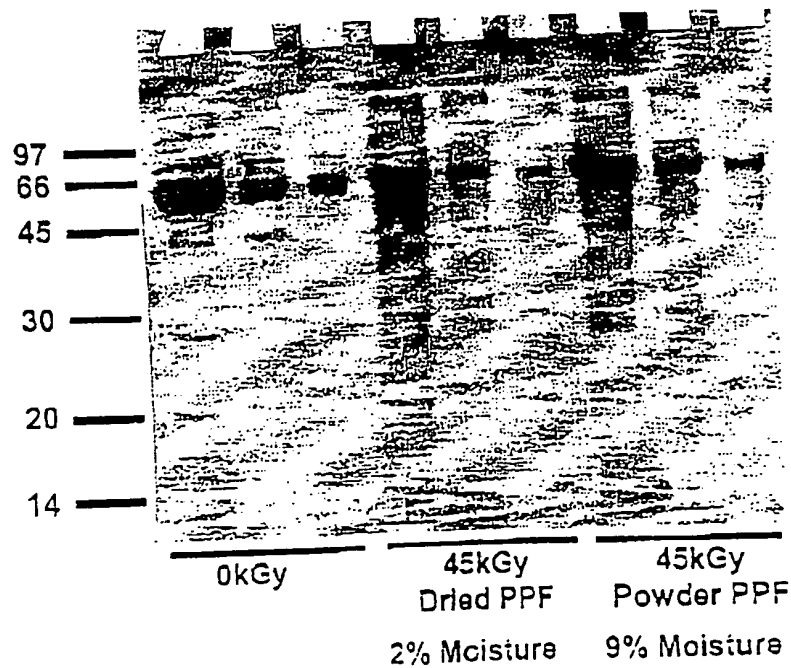


Gamma Irradiation of Dried and Powder PPF

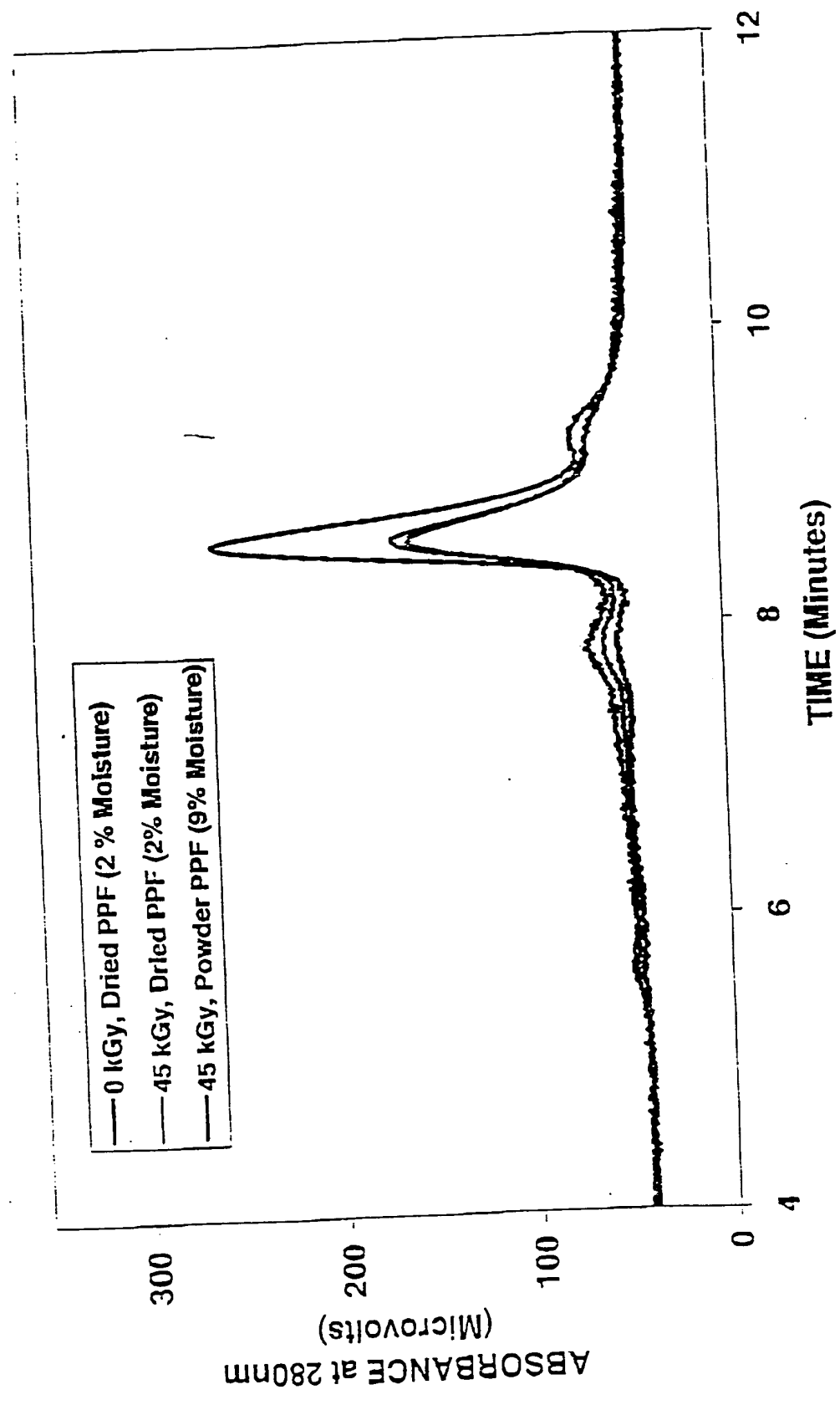
Nonreduced, 12.5 %



Reduced, 12.5%

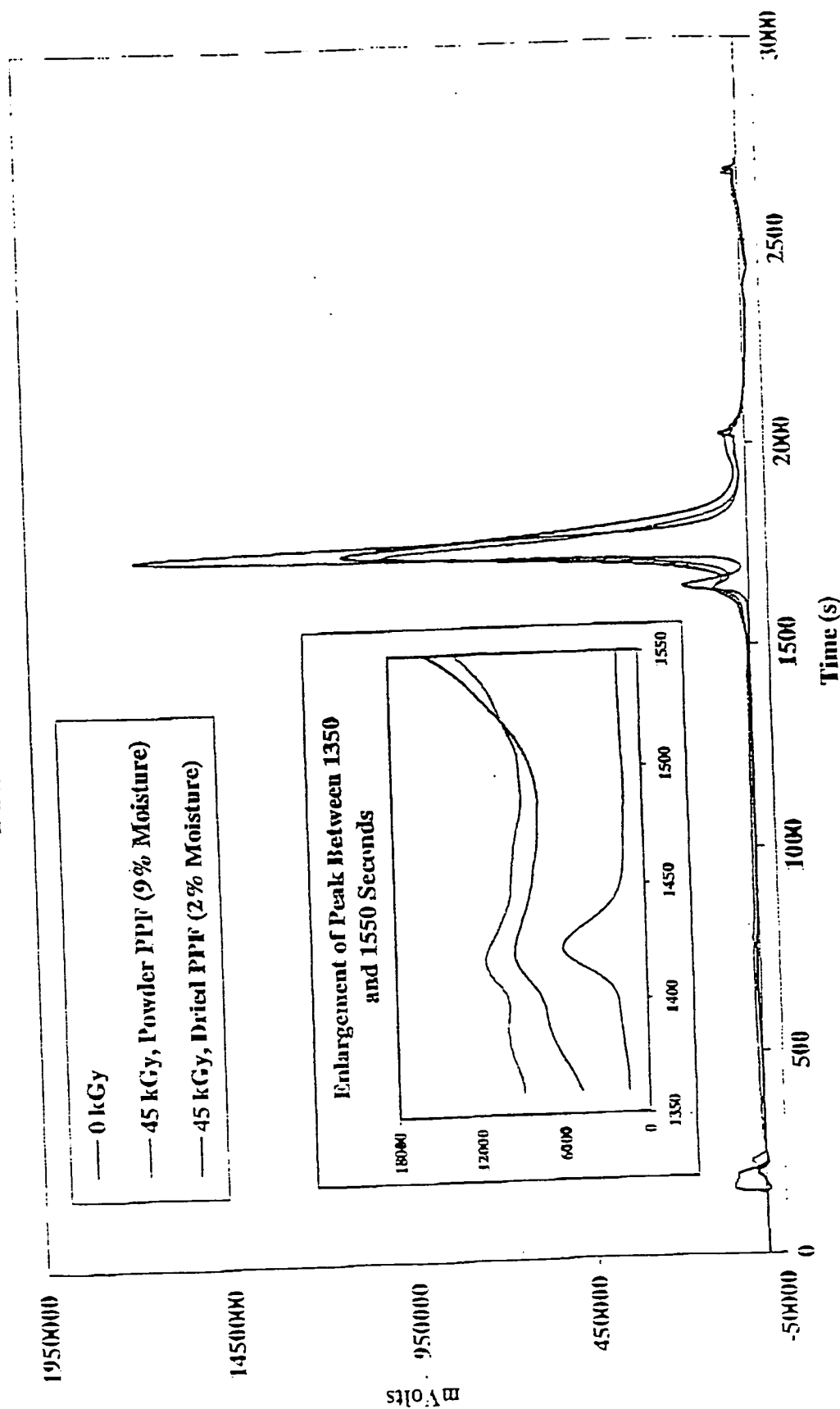


Gamma Irradiation of Dried and Powder PPF

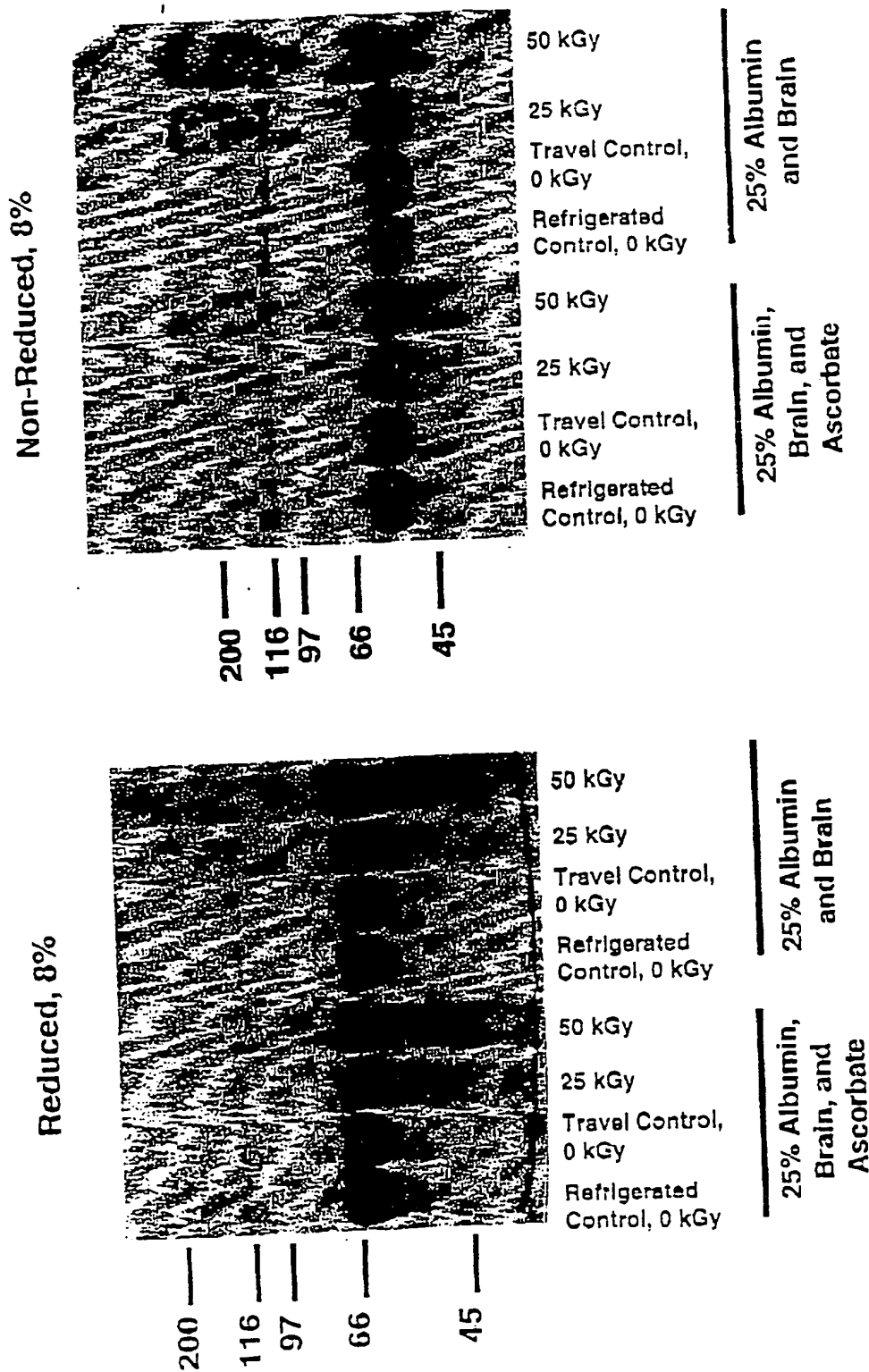


32B

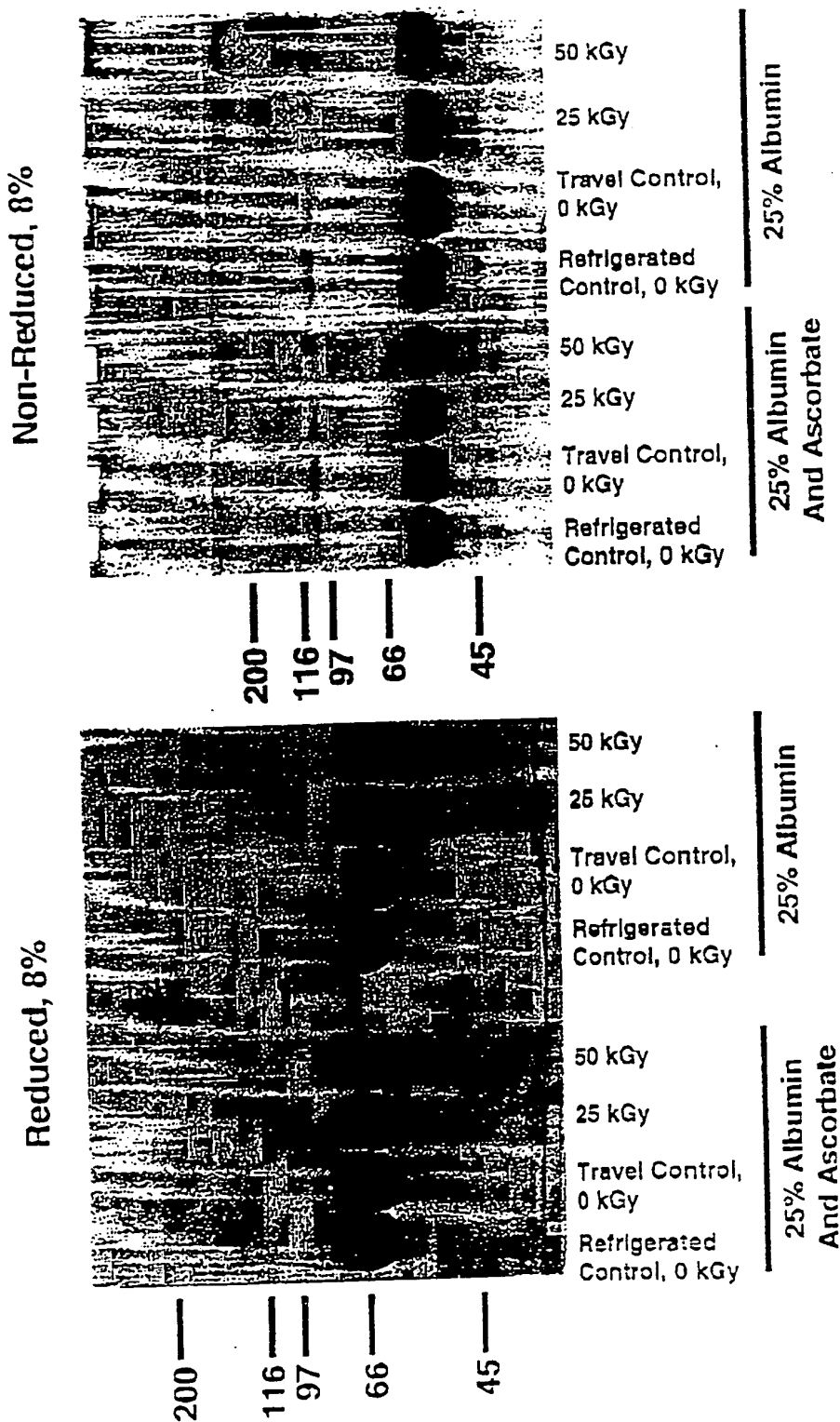
Gamma Irradiation of Dried and Powder PPF



Gamma Irradiation (to 25 and 50 kGy) of 25% Albumin in the Presence of Brain Alone or in Combination with 200 mM Ascorbate

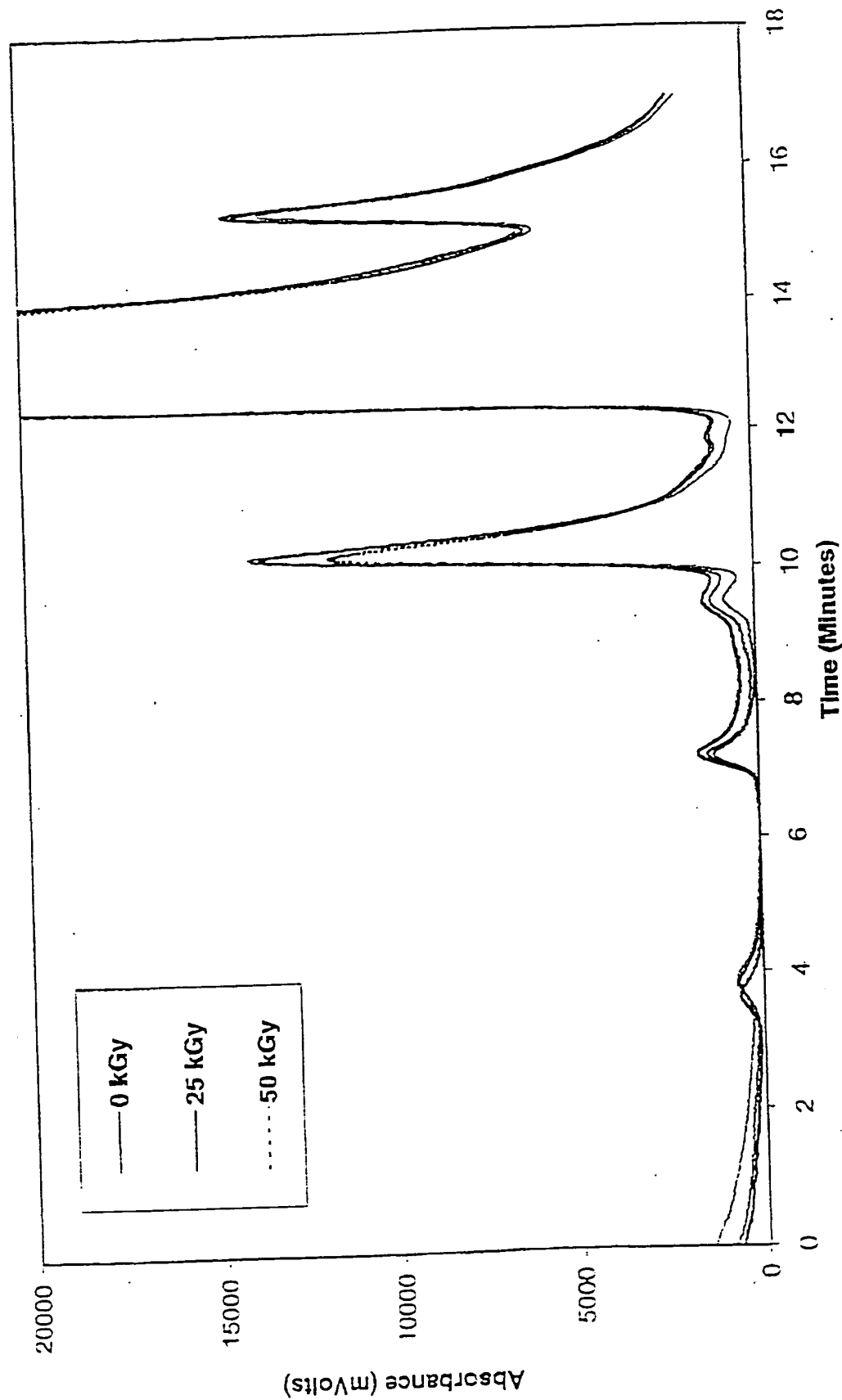


Gamma Irradiation (to 25 and 50 kGy) of 25% Albumin in the Presence or Absence of 200 mM Ascorbate

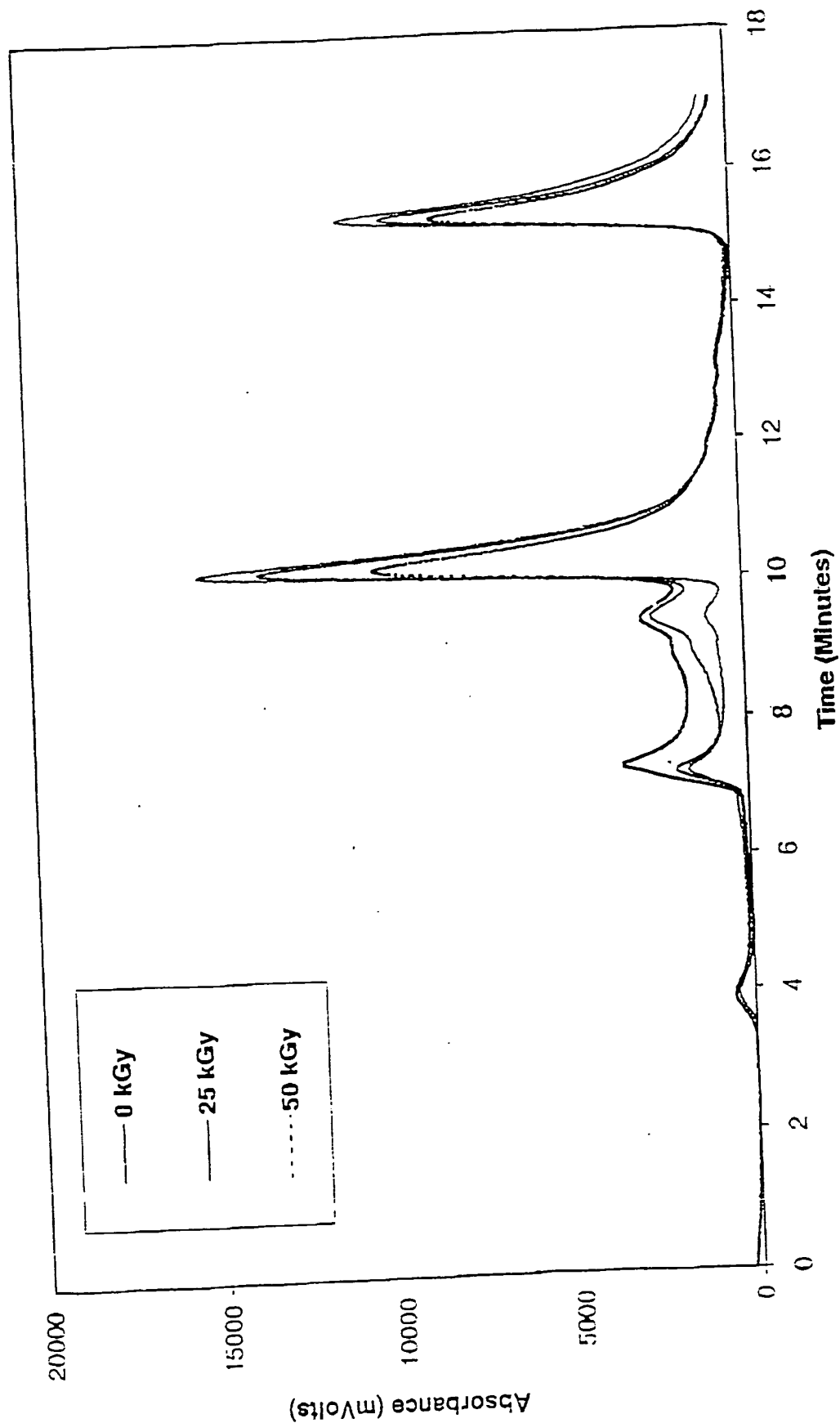


33B

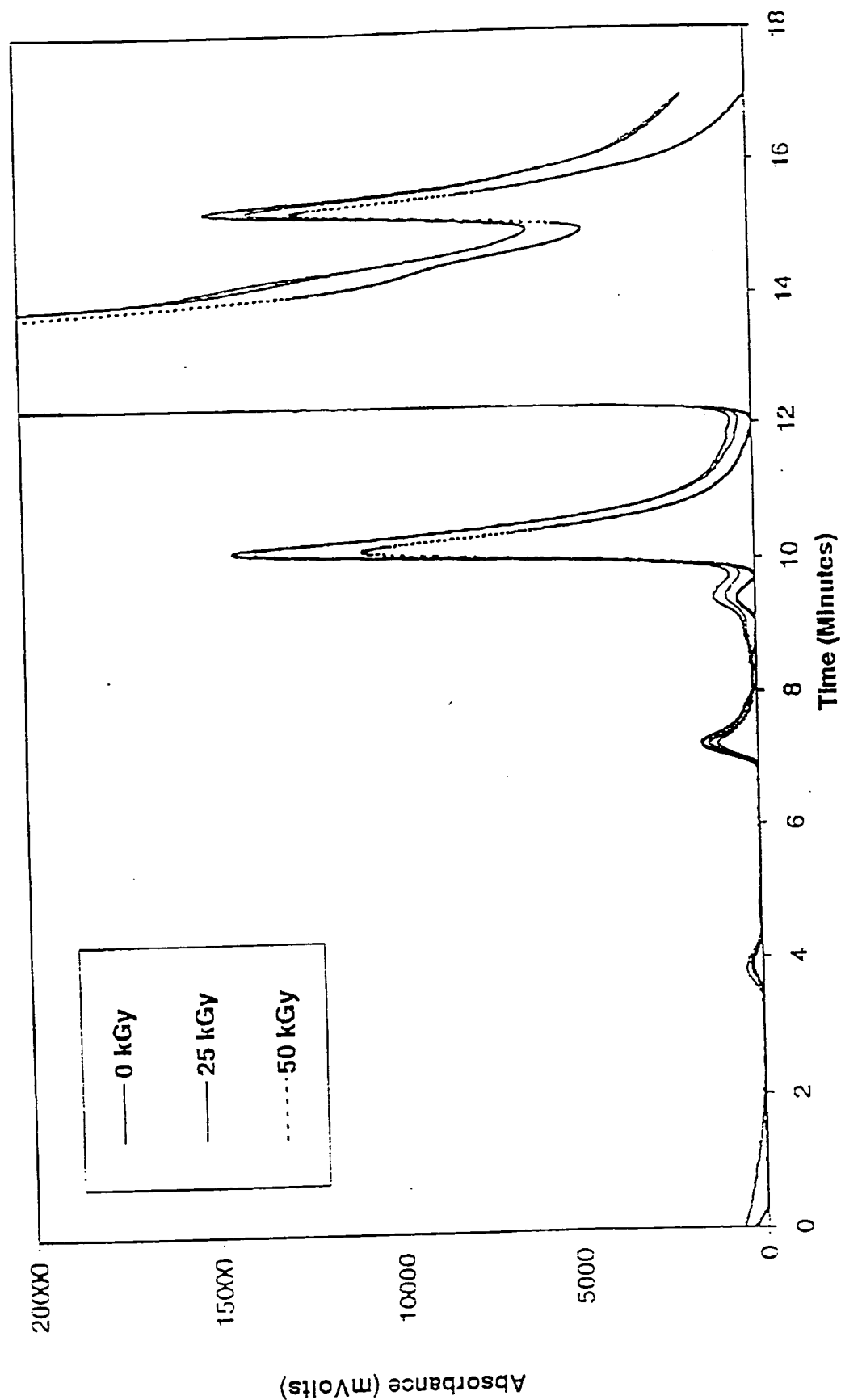
Gamma Irradiation of 25% Albumin in the Presence of Brain and 200 mM Ascorbate



Gamma Irradiation of 25% Albumin in the Presence of Brain

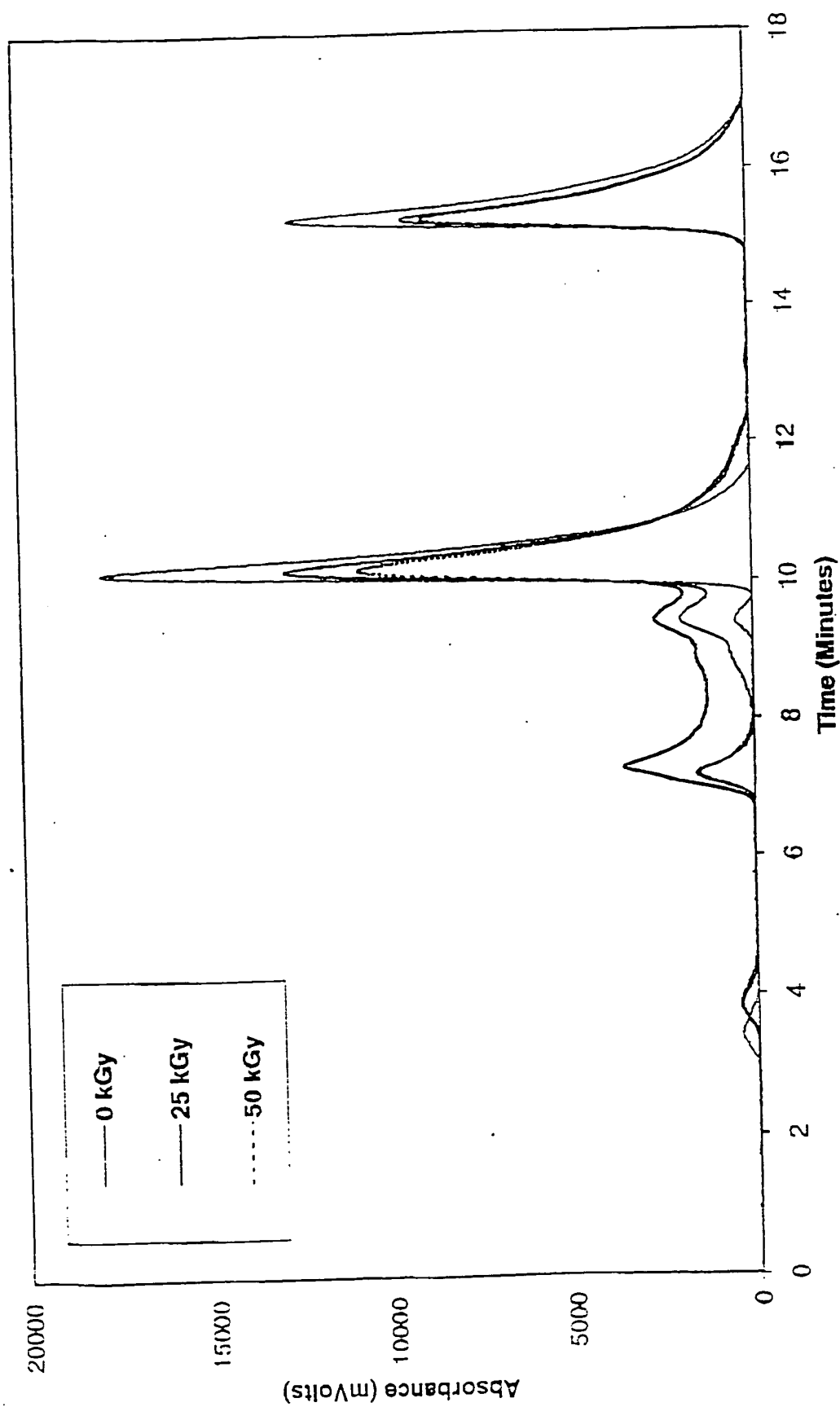


Gamma Irradiation of 25% Albumin in the Presence of 200 mM Ascorbate



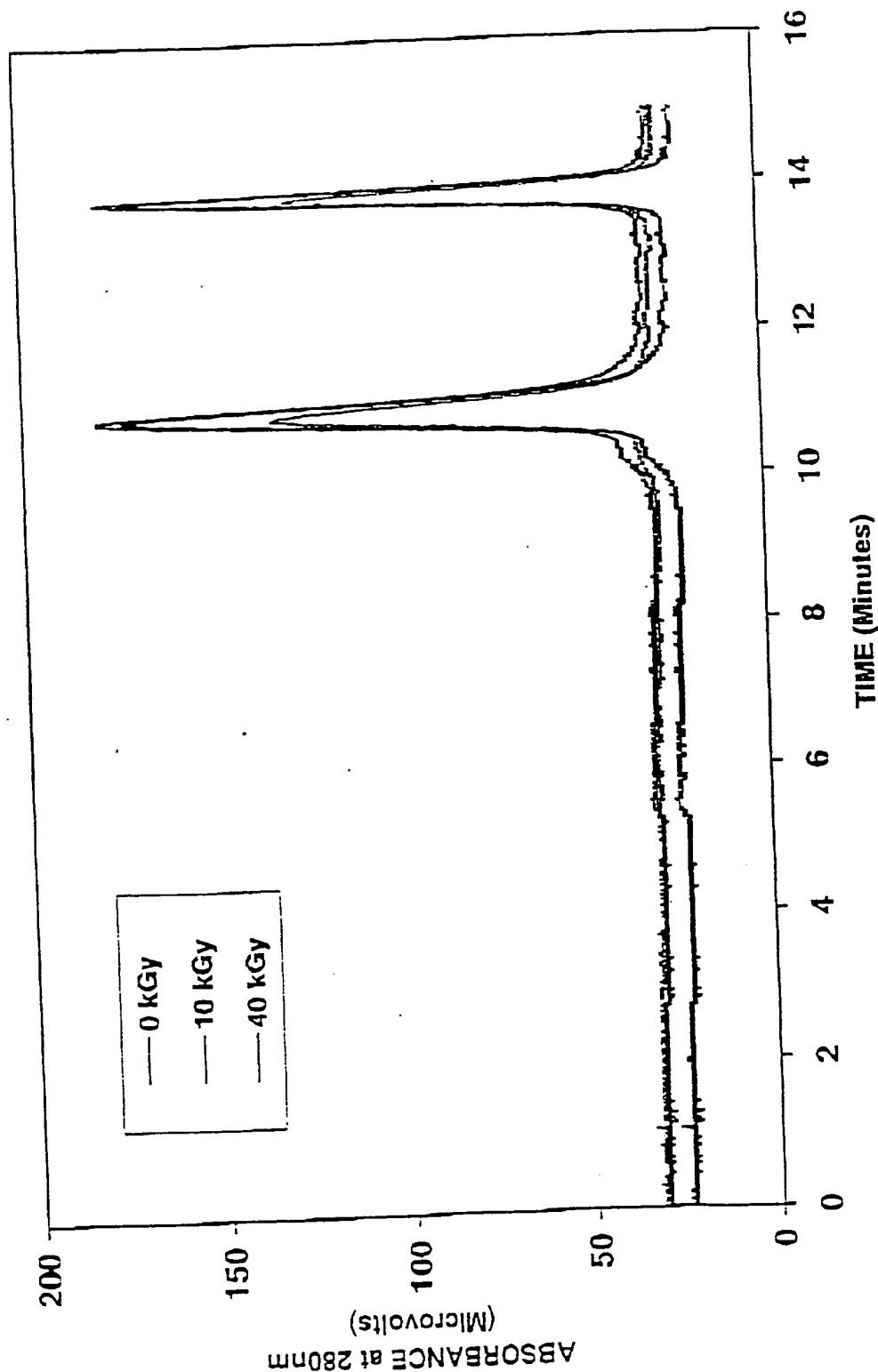
33E

Gamma Irradiation of 25% Albumin



33F

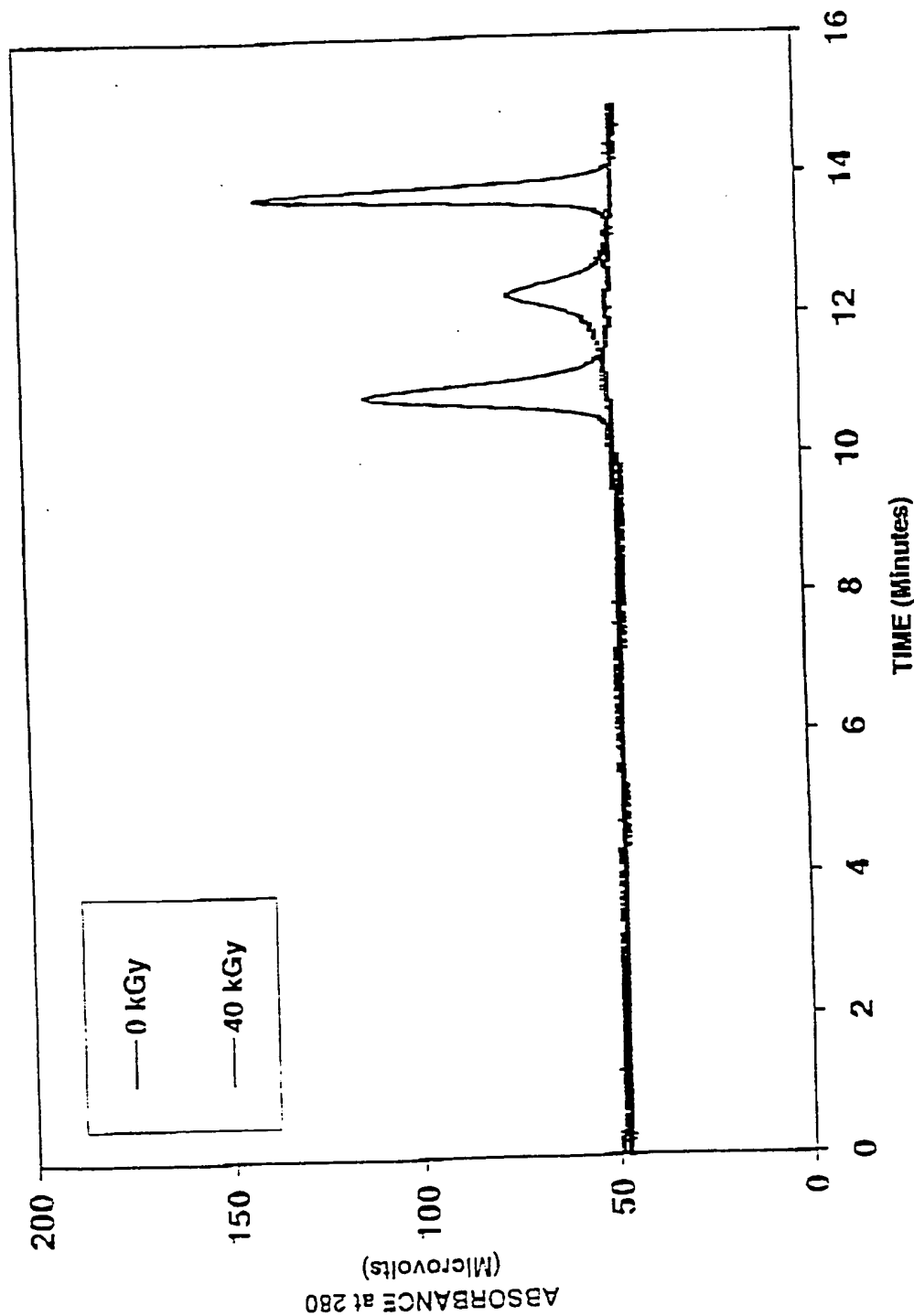
Gamma Irradiation of Lyophilized Albumin



34A

TOT 856260

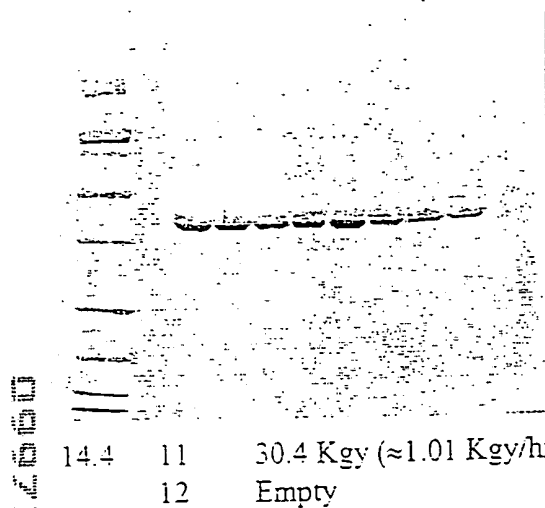
Gamma Irradiation of Liquid Albumin



34B

25% Albumin - Non-Reduced

1 2 3 4 5 6 7 8 9 10 11 12

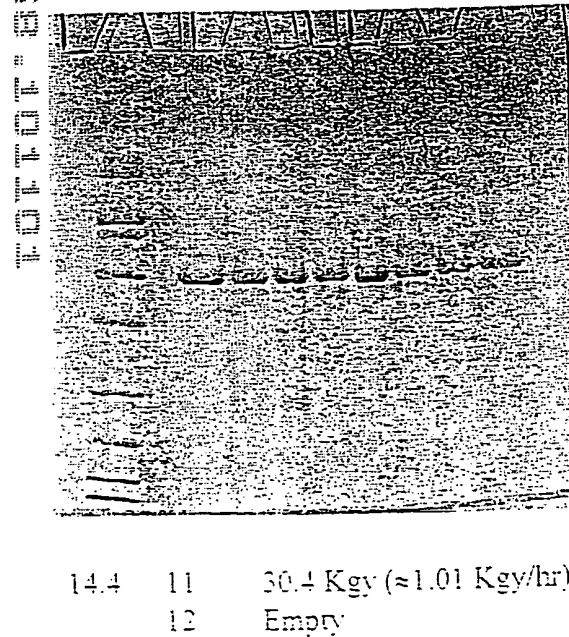


Std	Lane	Sample
Kd	1	Empty
	2	Broad Range Std. (BioRad)
200	3	Empty
116	4	0 Kgy (Control) Box 3C (- Ar)
97	5	18.0 Kgy (≈ 0.91 Kgy/hr) Box 1 (- Ar)
66	6	23.0 Kgy (≈ 0.92 Kgy/hr) Box 2 (- Ar)
45	7	30.4 Kgy (≈ 1.01 Kgy/hr) Box 3 (- Ar)
	8	0 Kgy (Control) Box 3C (- Ar)
31	9	18.0 Kgy (≈ 0.91 Kgy/hr) Box 1 (- Ar)
21.5	10	23.0 Kgy (≈ 0.92 Kgy/hr) Box 2 (- Ar)
14.4	11	30.4 Kgy (≈ 1.01 Kgy/hr) Box 3 (- Ar)
	12	Empty

35A

25% Albumin - Reduced

1 2 3 4 5 6 7 8 9 10 11 12

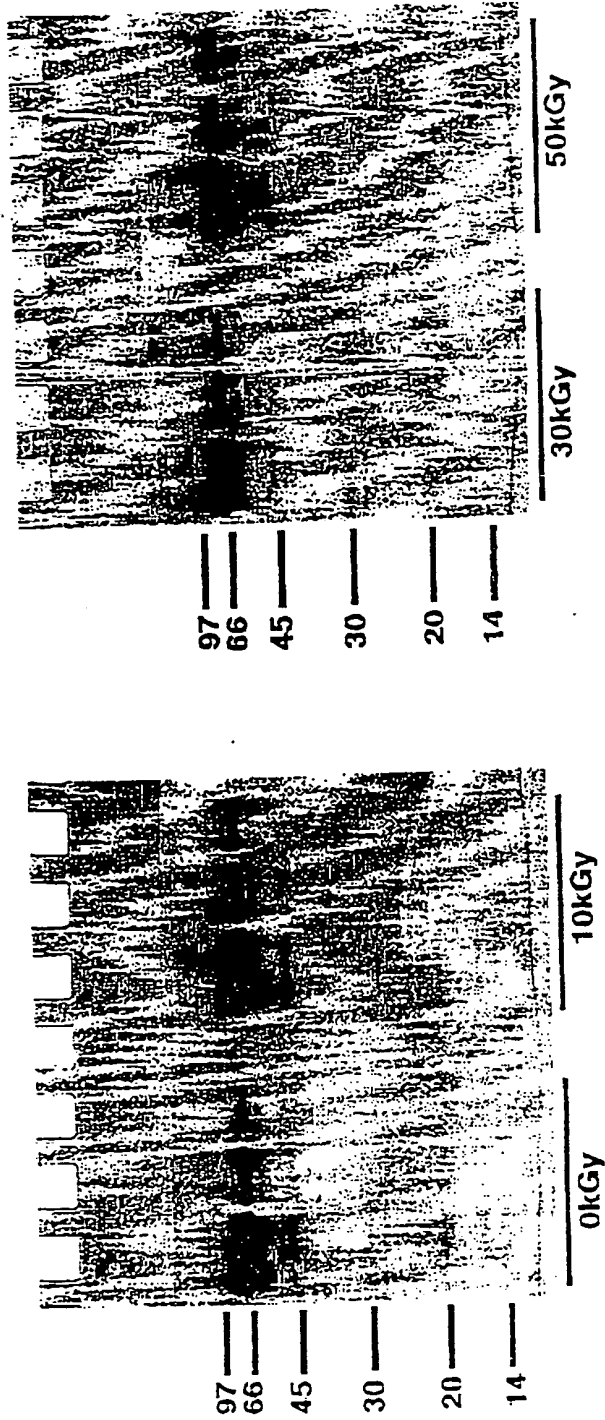


Std	Lane	Sample
Kd	1	Empty
	2	Broad Range Std. (BioRad)
200	3	Empty
116	4	0 Kgy (Control) Box 3C (- Ar)
97	5	18.0 Kgy (≈ 0.91 Kgy/hr) Box 1 (+ Ar)
66	6	23.0 Kgy (≈ 0.92 Kgy/hr) Box 2 (+ Ar)
45	7	30.4 Kgy (≈ 1.01 Kgy/hr) Box 3 (+ Ar)
	8	0 Kgy (Control) Box 3C (- Ar)
31	9	18.0 Kgy (≈ 0.91 Kgy/hr) Box 1 (- Ar)
21.5	10	23.0 Kgy (≈ 0.92 Kgy/hr) Box 2 (- Ar)
14.4	11	30.4 Kgy (≈ 1.01 Kgy/hr) Box 3 (- Ar)
	12	Empty

35B

TOP SECRET
Gamma Irradiation of Powder PPF at -20°C

Reduced

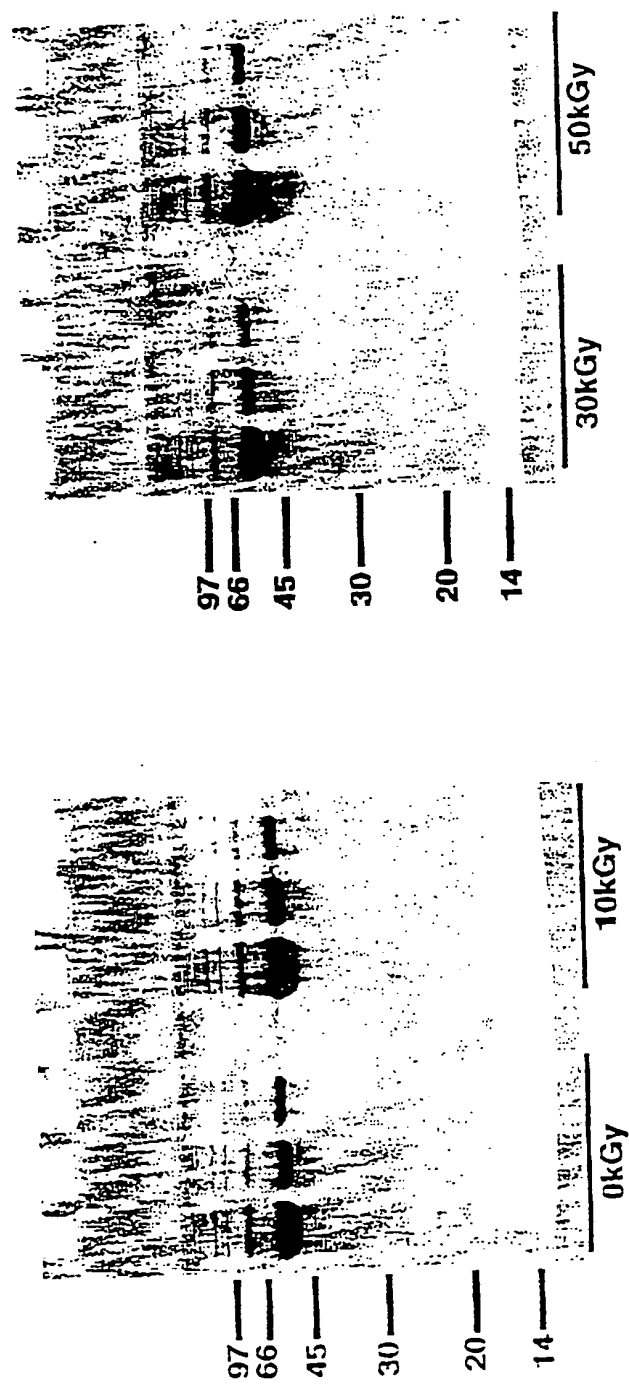


36A

10101-856260

Gamma Irradiation of Powder PPF at -20°C

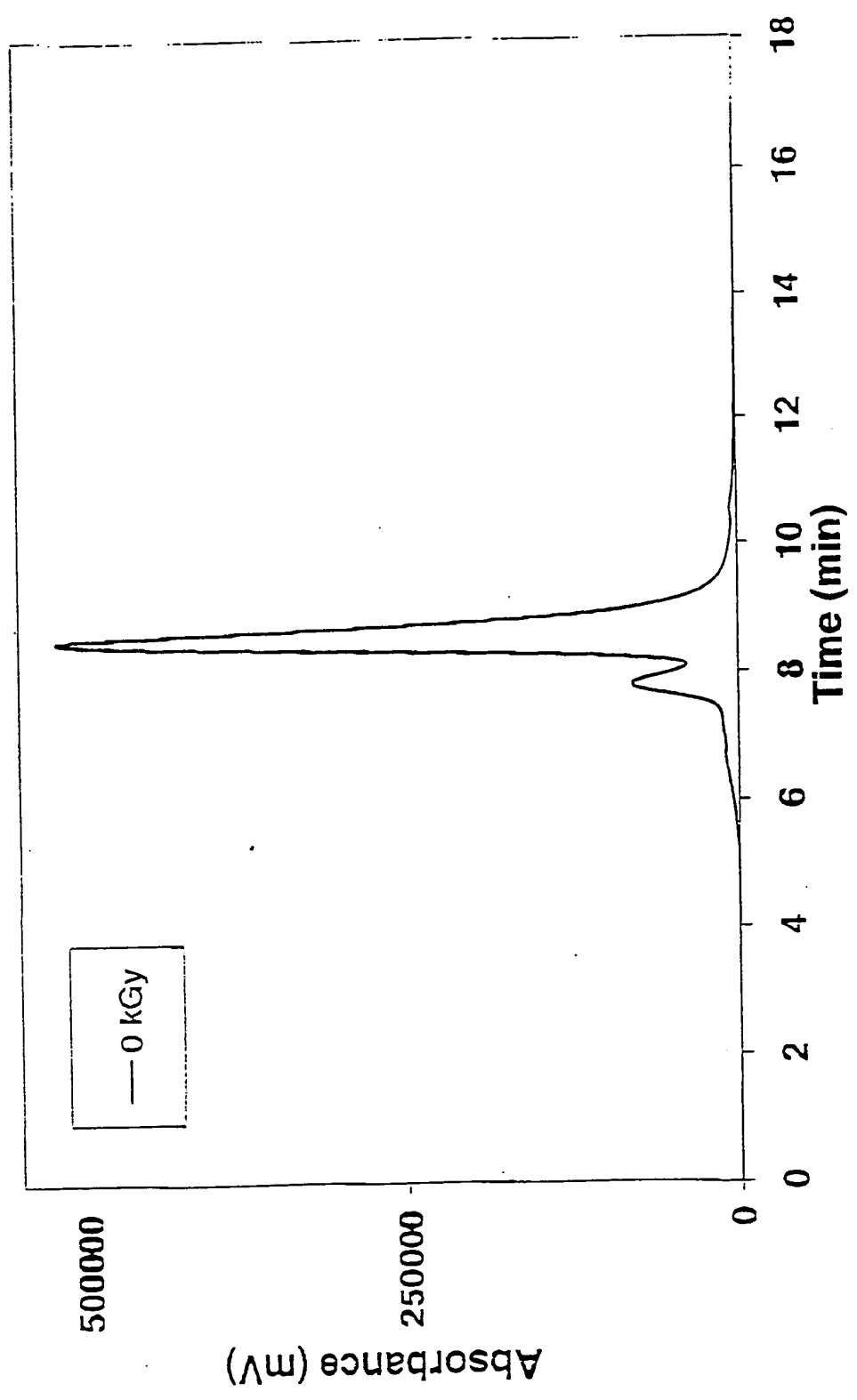
Nonreduced



36B

PPF 000000

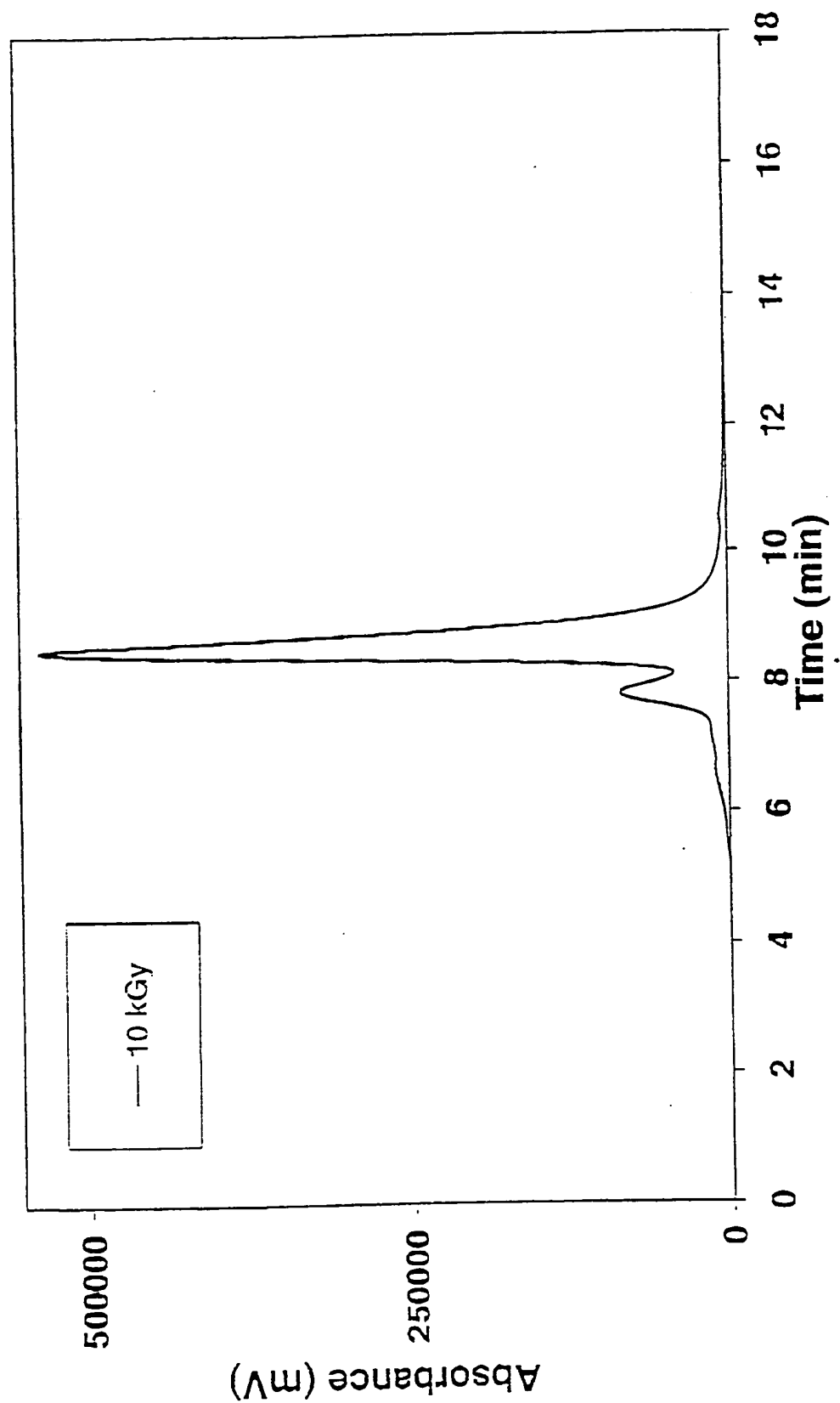
Gamma Irradiation of Powder PPF



36C

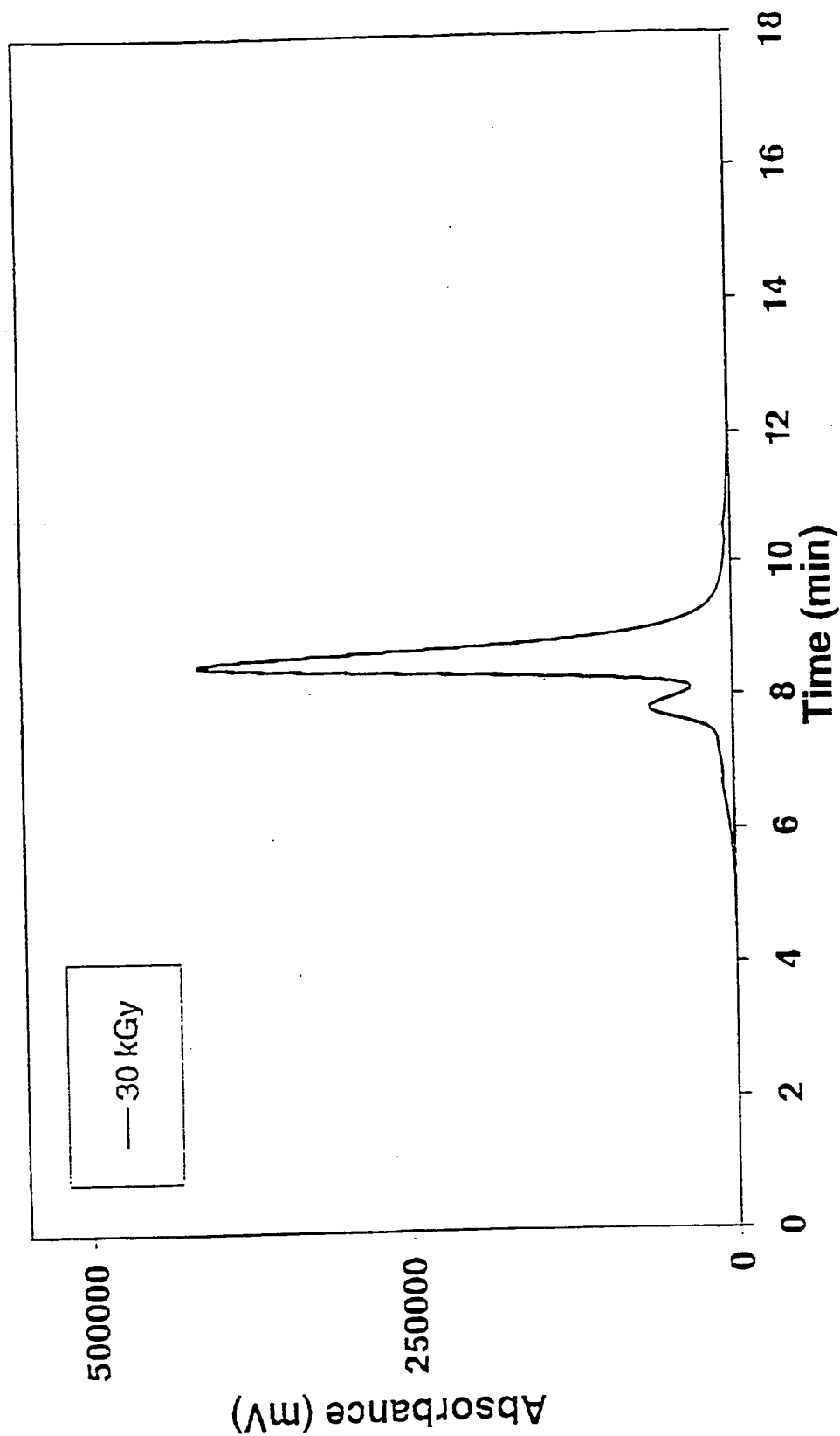
REF ID: A58260

Gamma Irradiation of Powder PPF



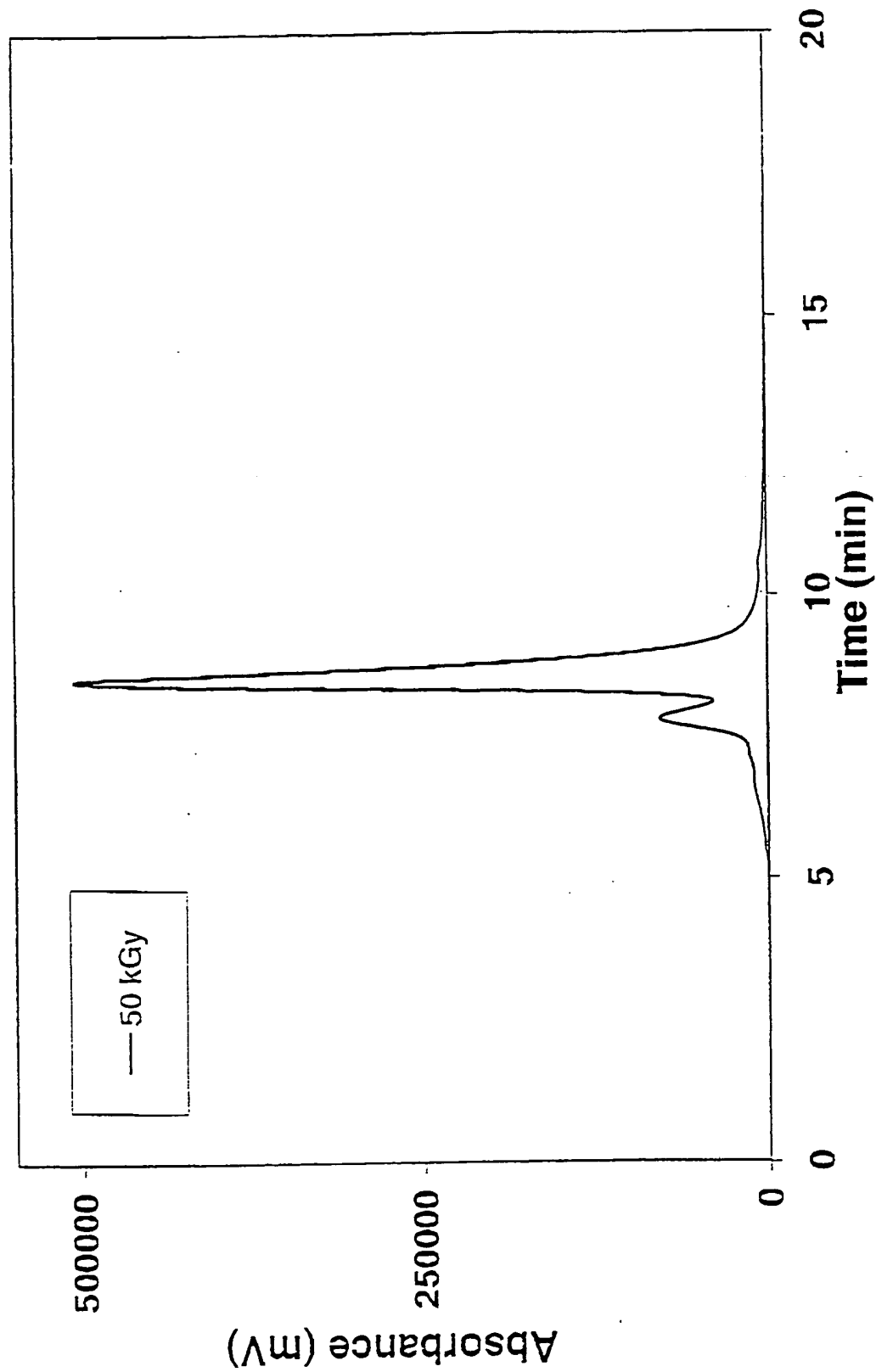
36D

Gamma Irradiation of Powder PPF



36E

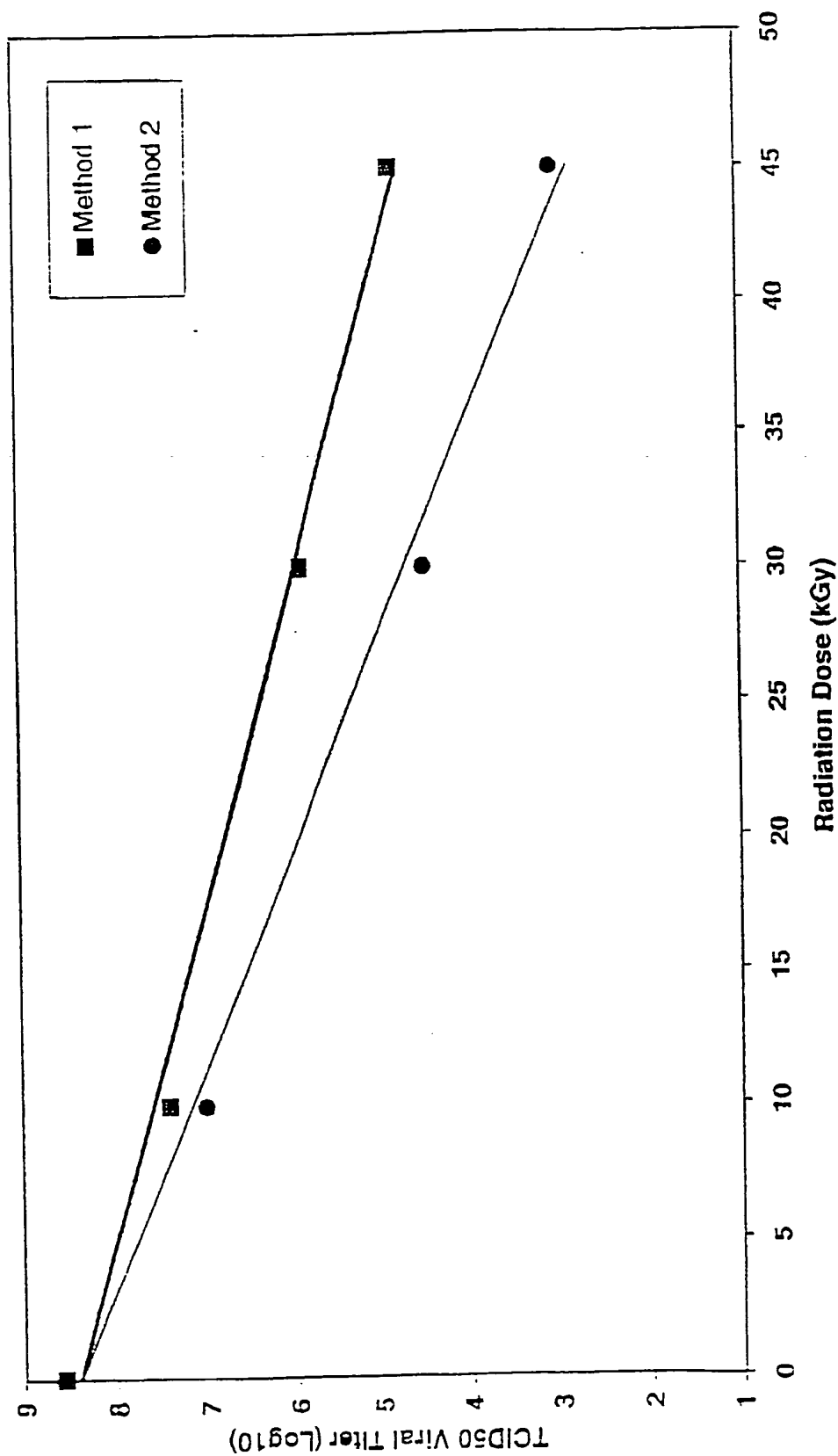
Gamma Irradiation of Powder PPF



36F

TABLE 3

Gamma Irradiation of PPV in PPF by Irradiation at
-80°C

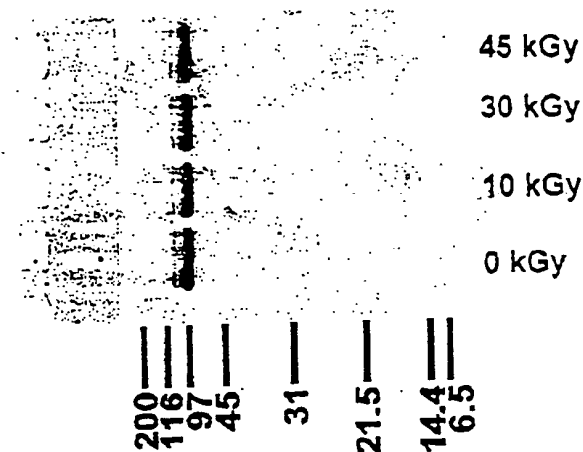


37A

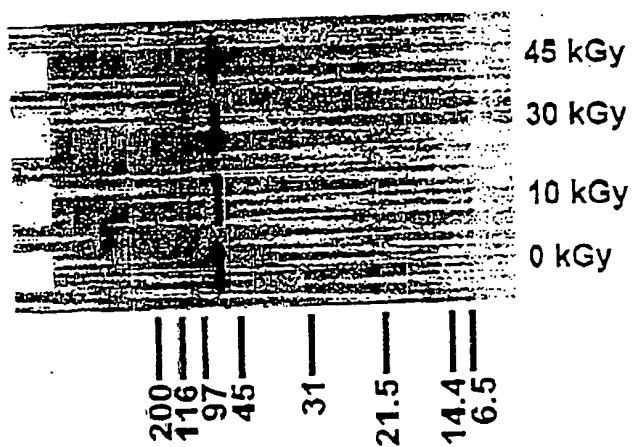
TOP SECRET

Gamma Irradiation of PPF By Method 2

Reduced 12.5%

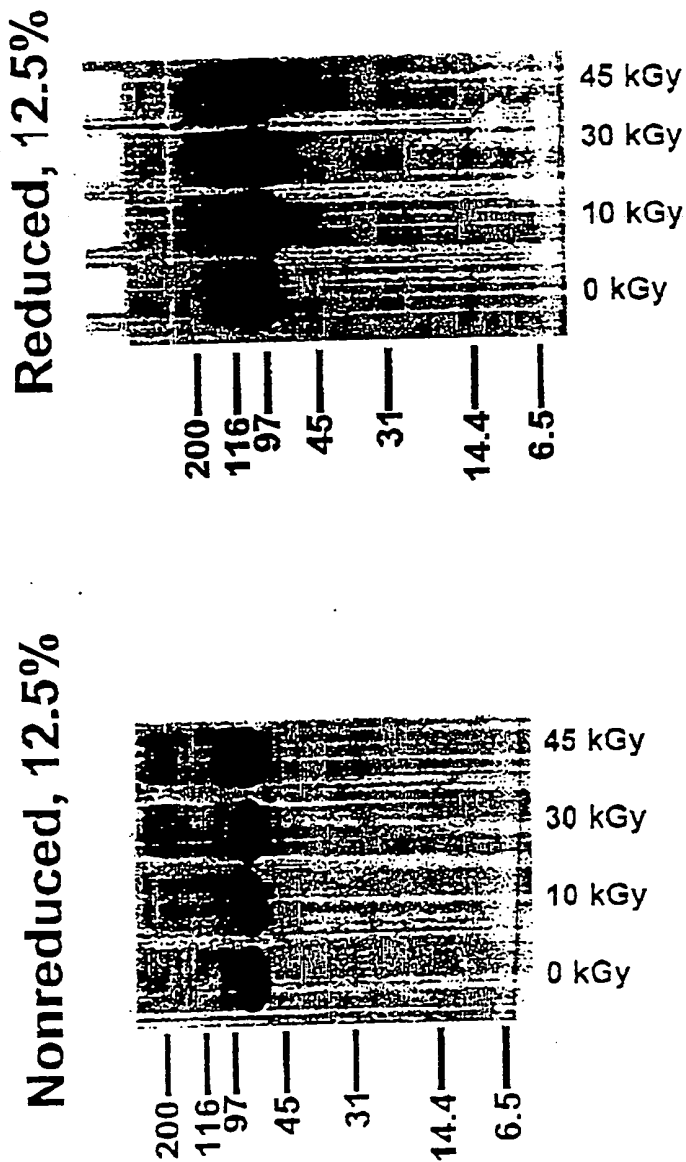


Nonreduced, 12.5%



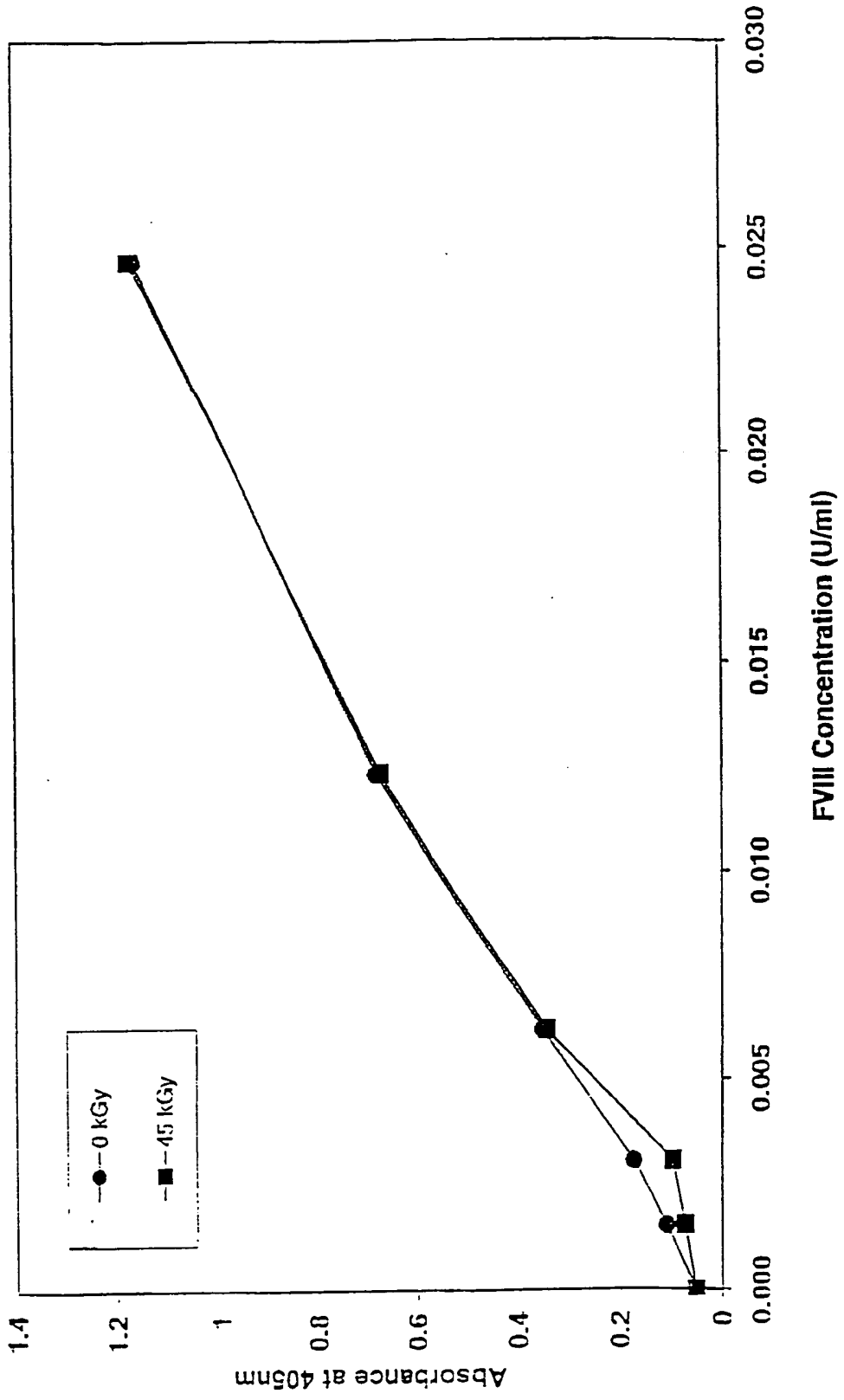
37B

083101.alb.04/ 073001.jla.016 Gamma Irradiation of PPF By Method 1

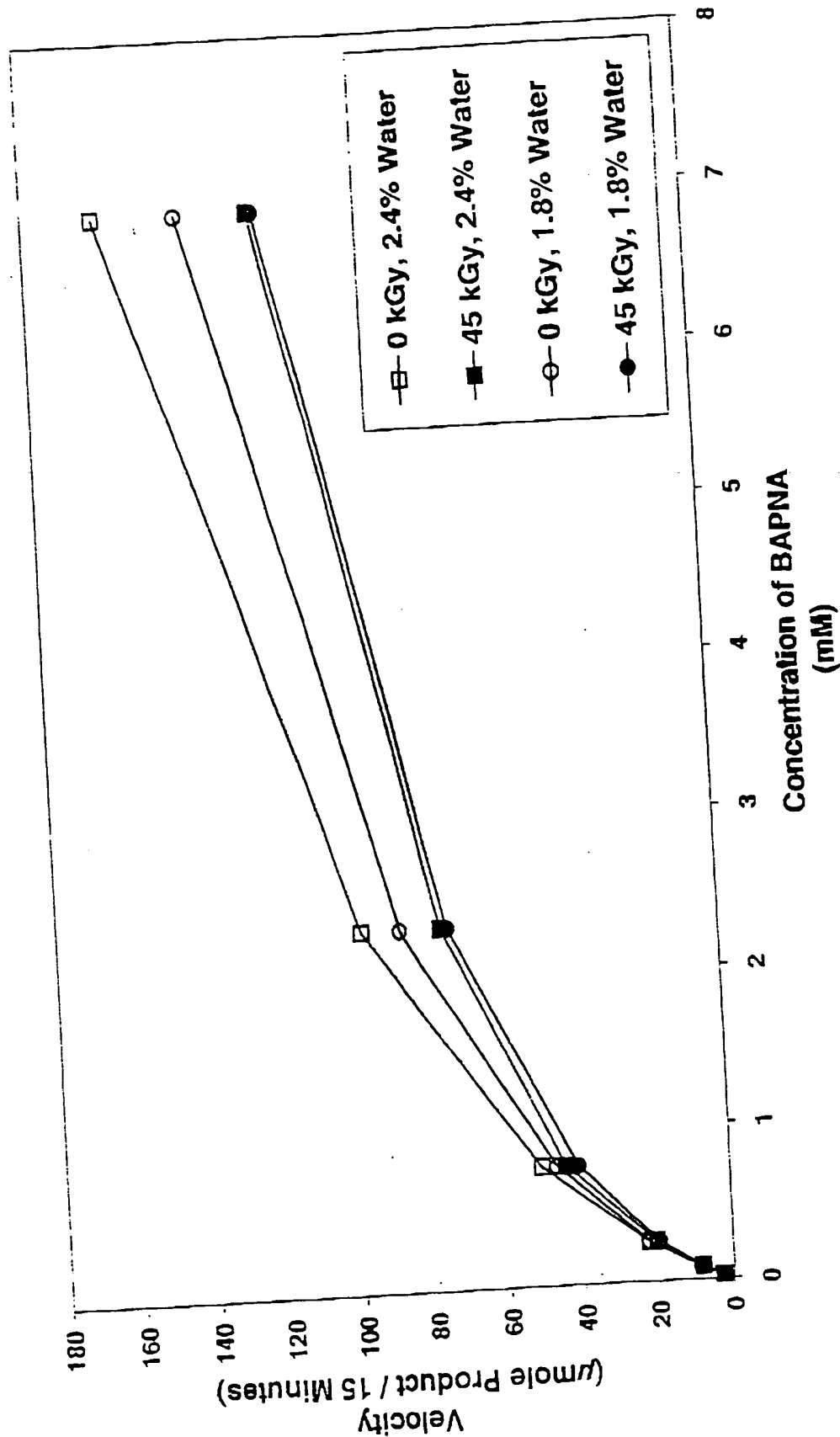


37C

Gamma Irradiation of FVIII

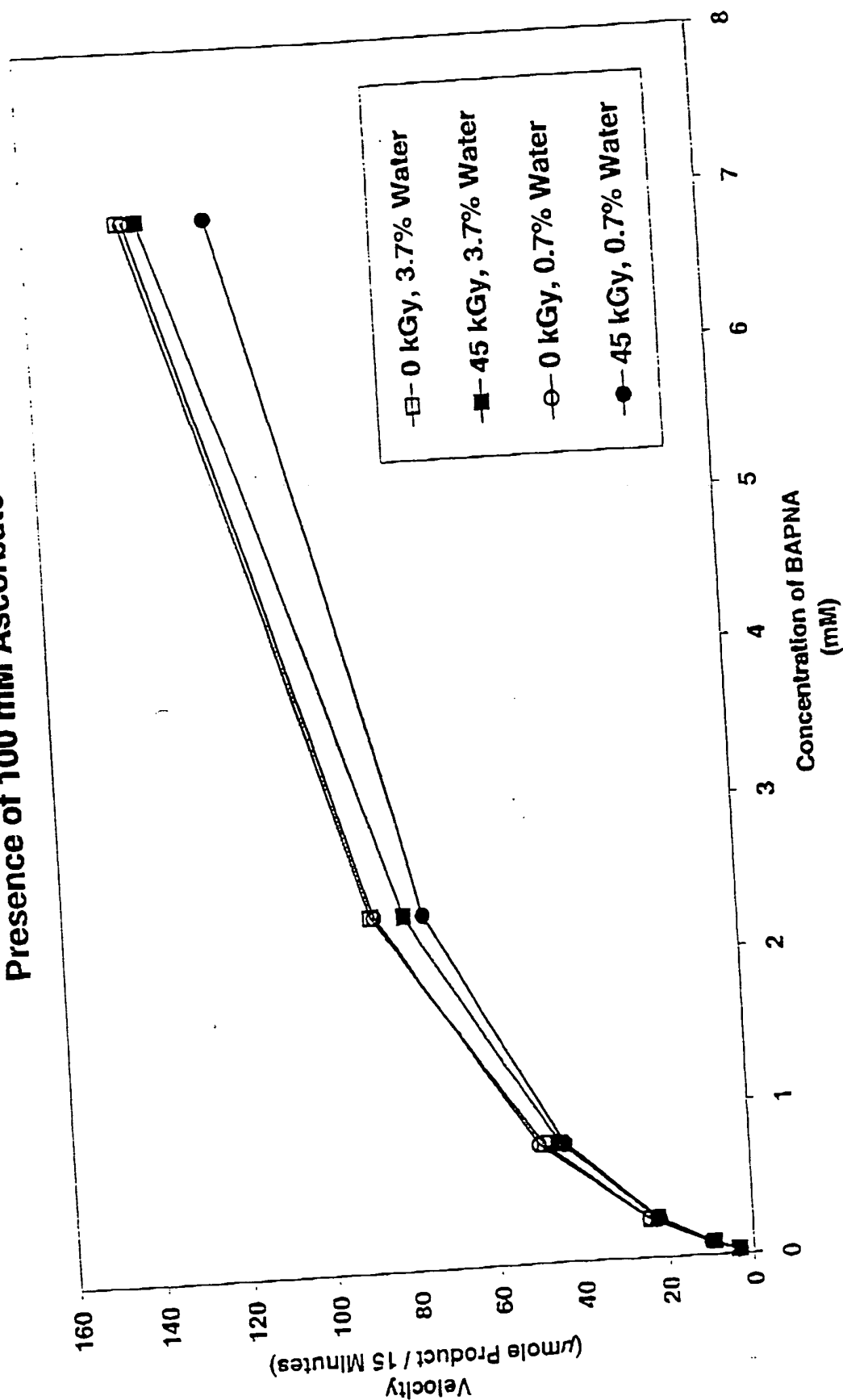


Gamma Irradiation of Lyophilized Trypsin In the Absence of Ascorbate



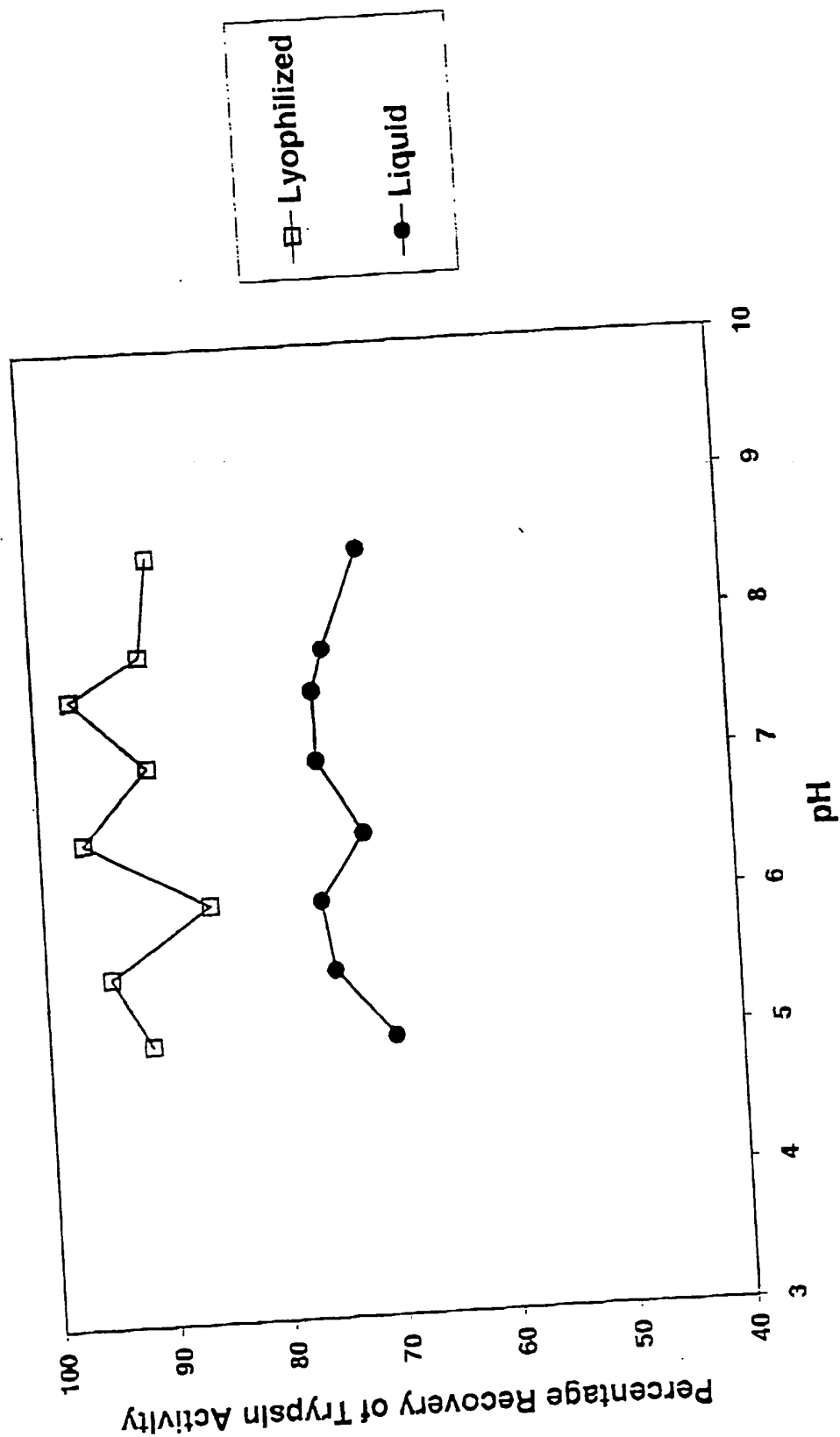
39A

Gamma Irradiation of Lyophilized Trypsin In the Presence of 100 mM Ascorbate

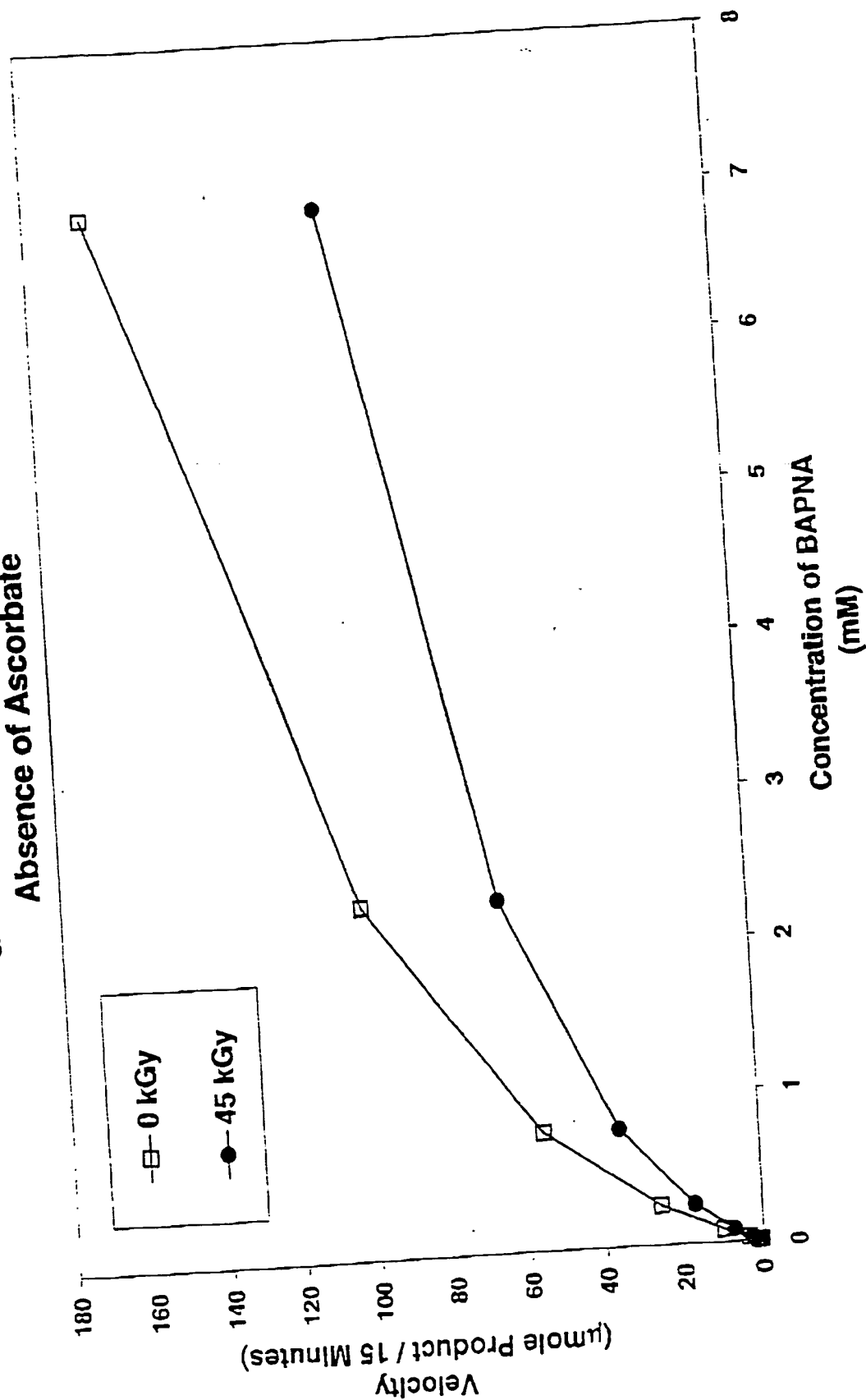


39B

Gamma Irradiation of Two Forms of Trypsin In the Presence of 200 mM Ascorbate

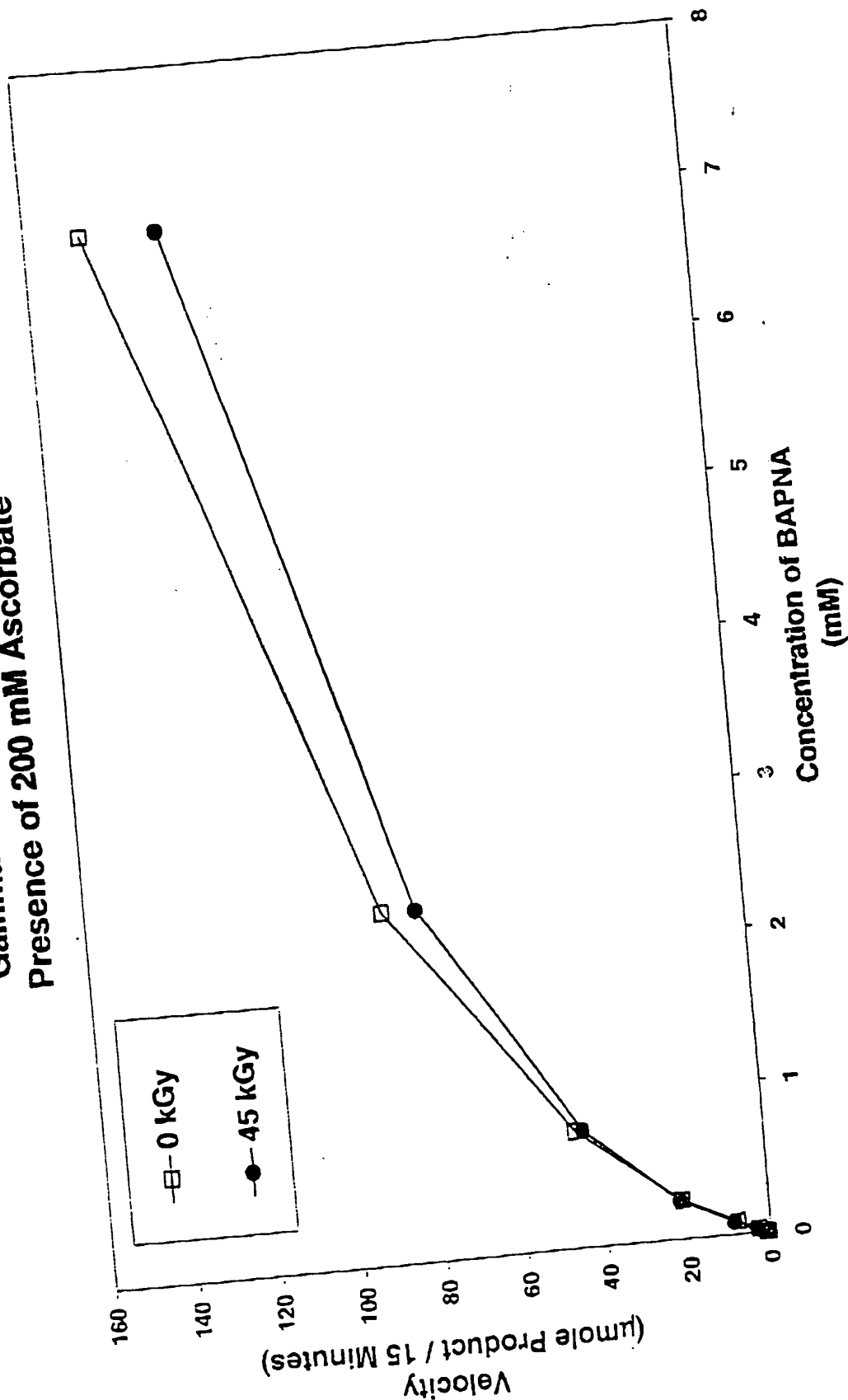


Gamma Irradiation of Lyophilized Trypsin in the Absence of Ascorbate



TOP SECRET

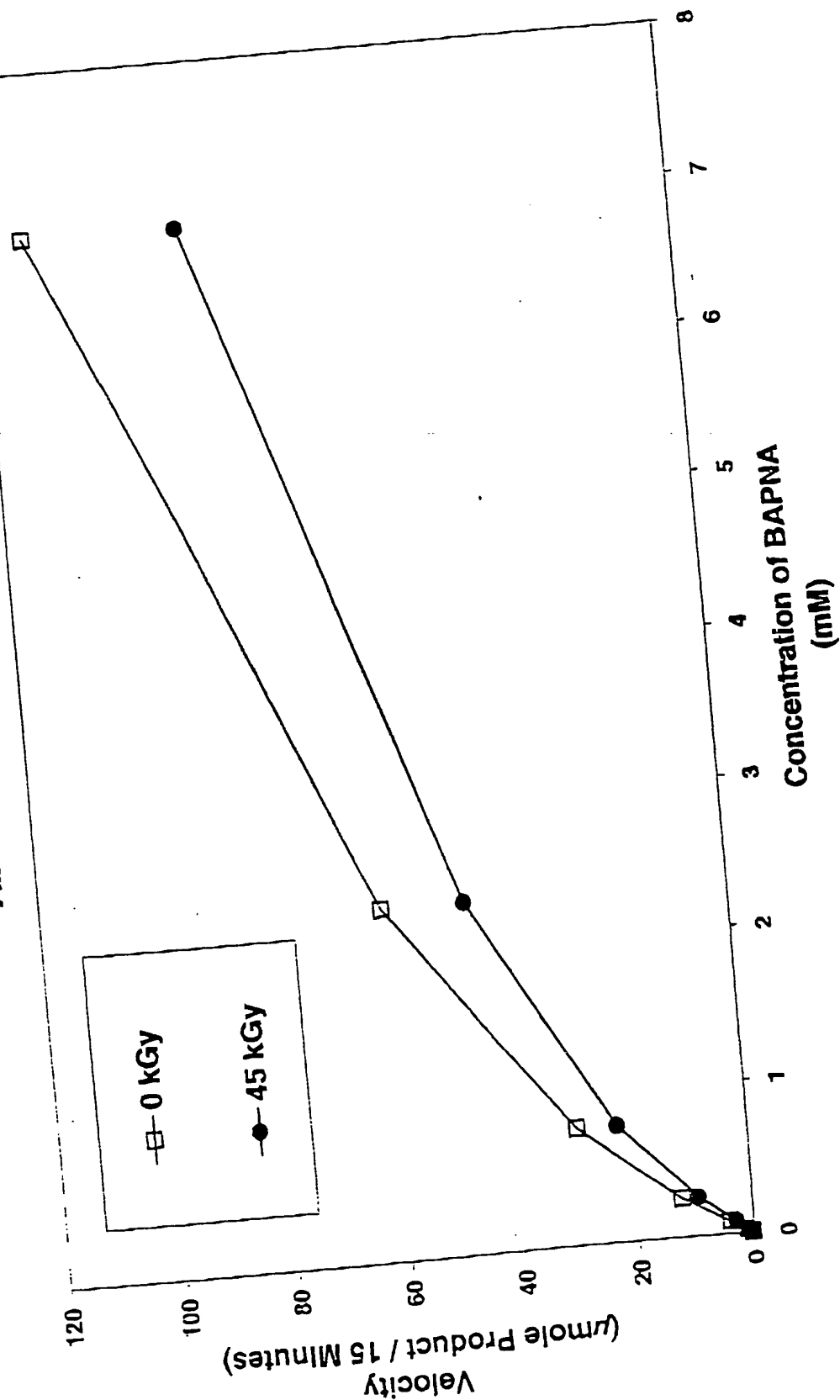
Gamma Irradiation of Lyophilized Trypsin in the Presence of 200 mM Ascorbate



41B

UPT-3500

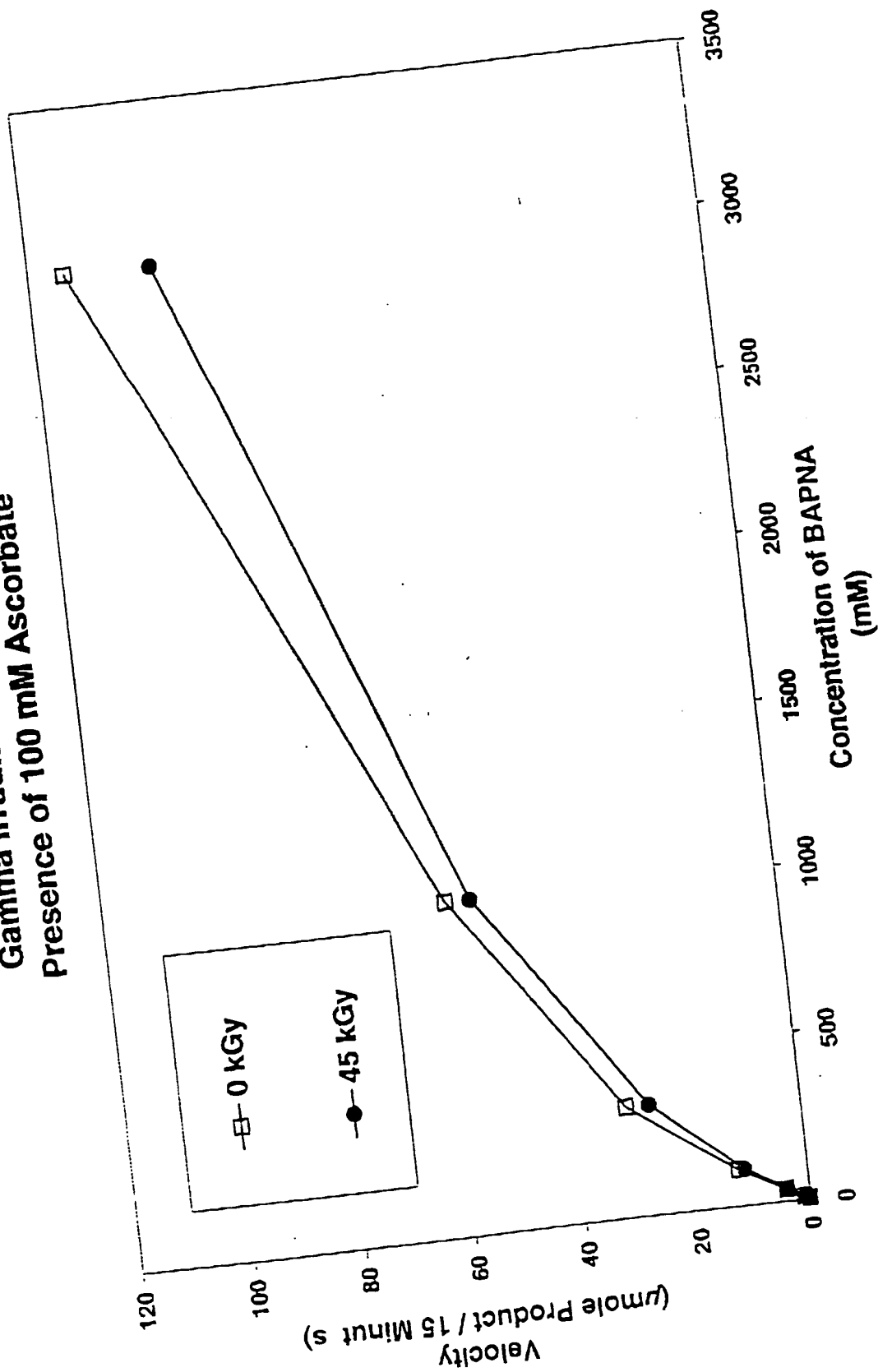
Gamma Irradiation of Lyophilized Trypsin In the Absence of Ascorbate



42A

REF: 336260

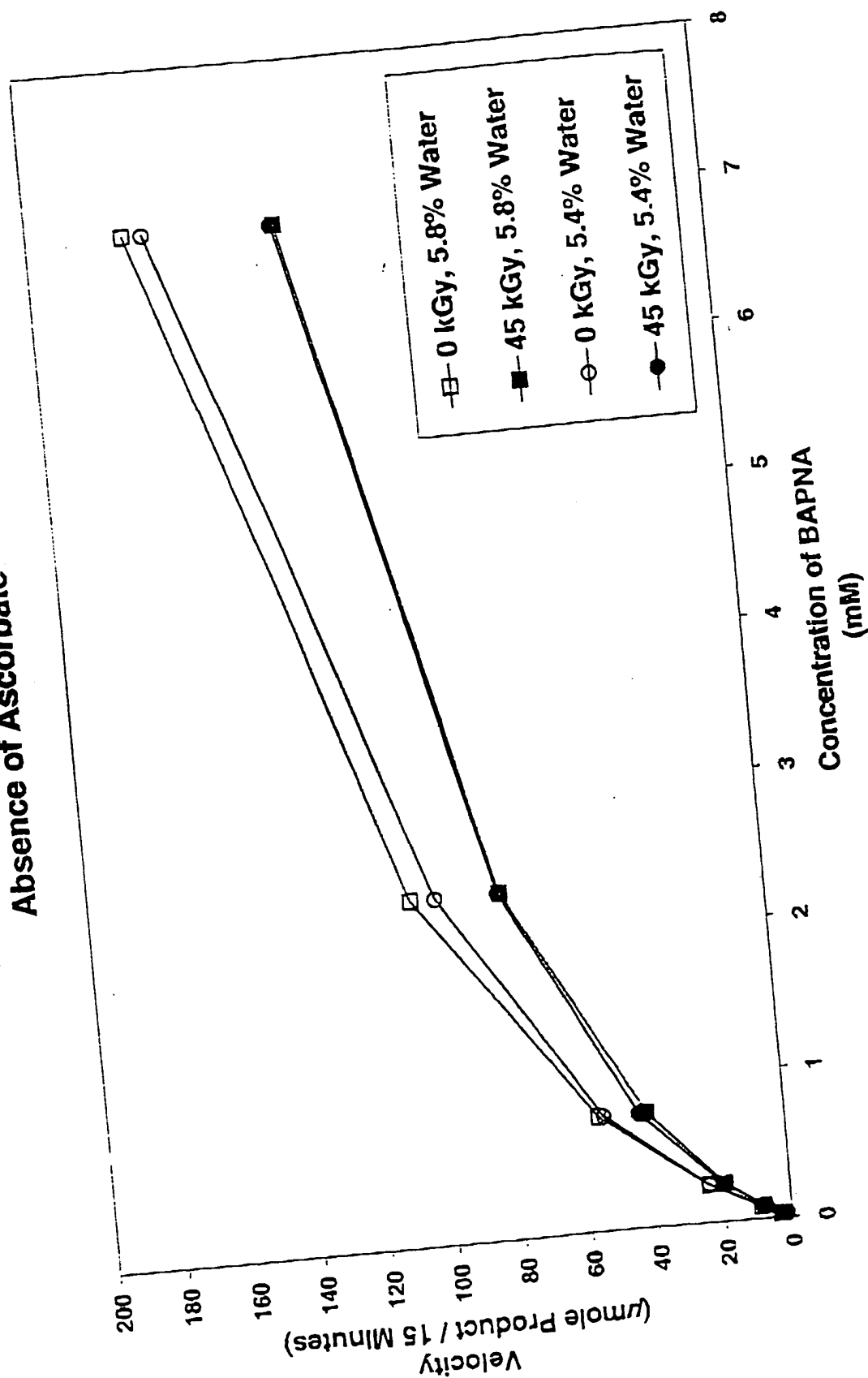
Gamma Irradiation of Lyophilized Trypsin in the Presence of 100 mM Ascorbate



42B

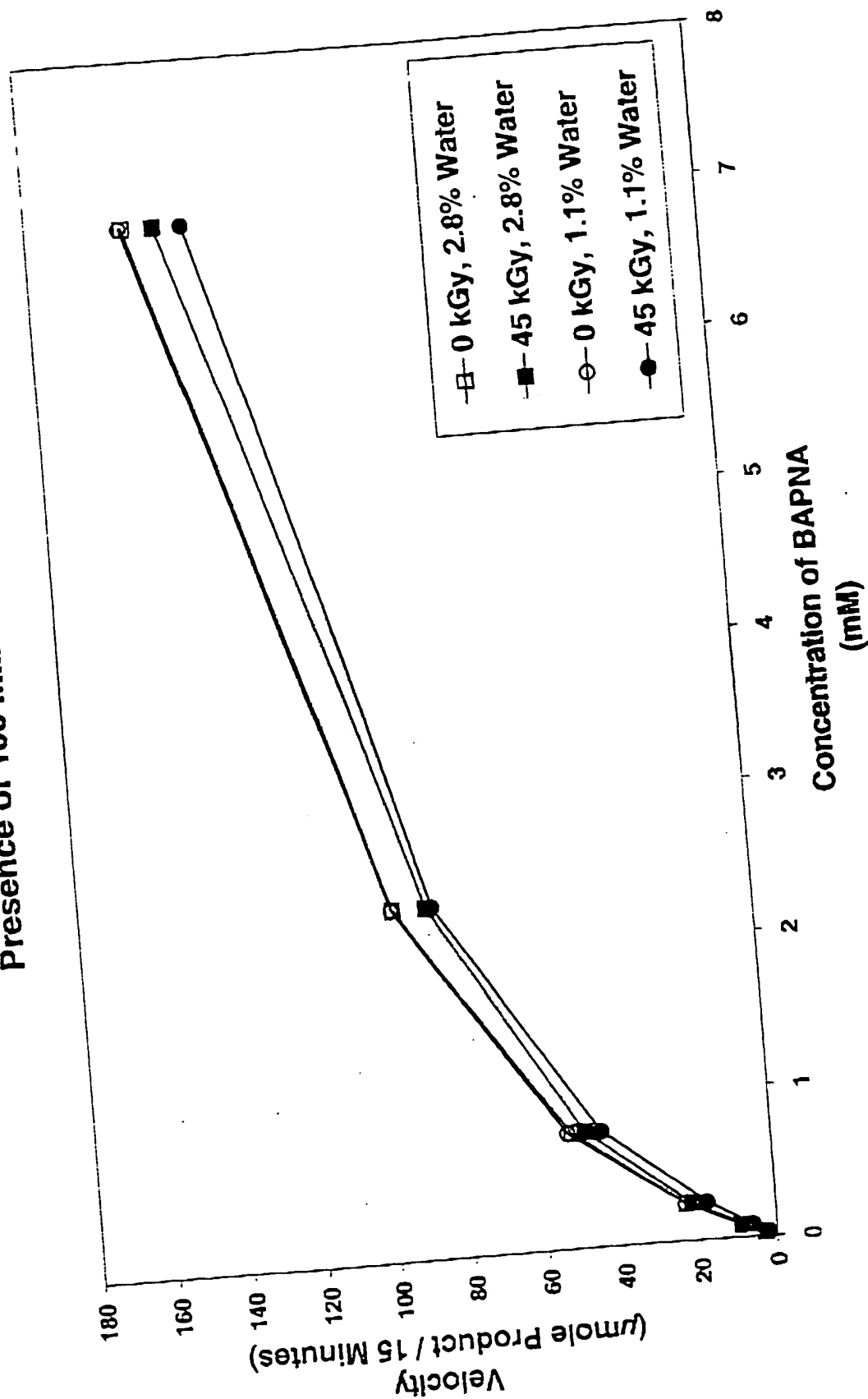
FOOT 332200

Gamma Irradiation of Lyophilized Trypsin In the Absence of Ascorbate



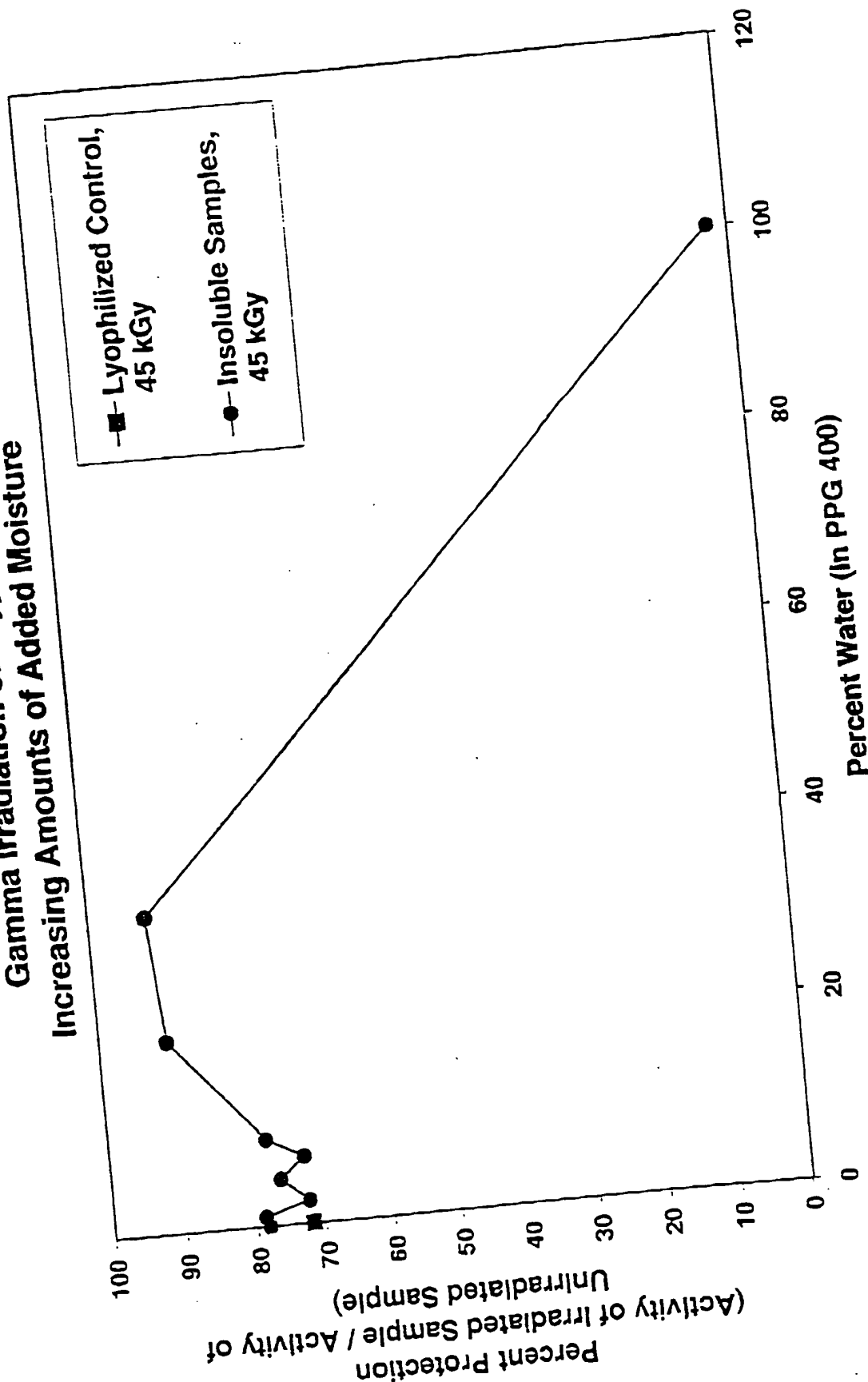
43A

Gamma Irradiation of Lyophilized Trypsin In the Presence of 100 mM Ascorbate

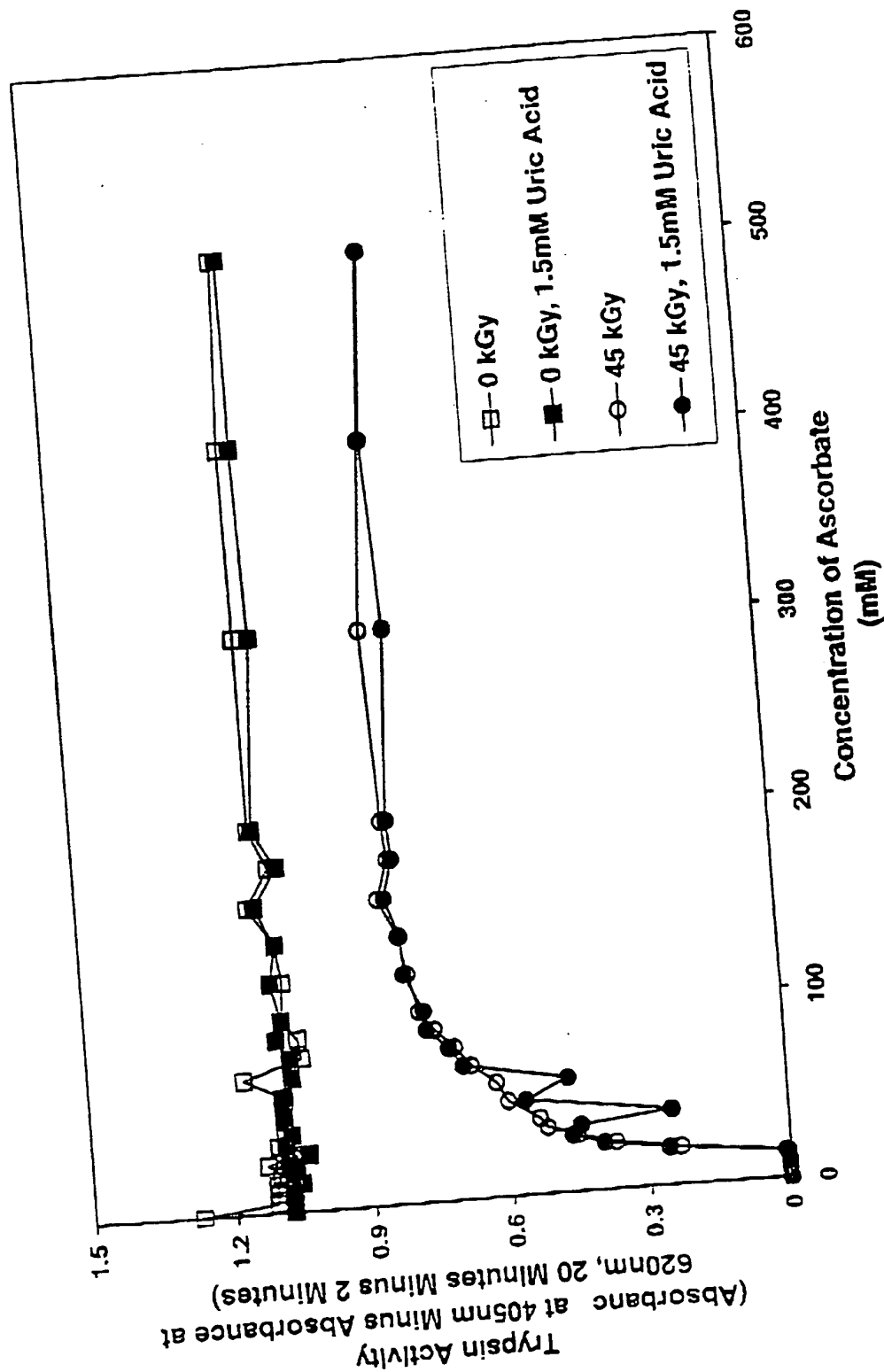


43B

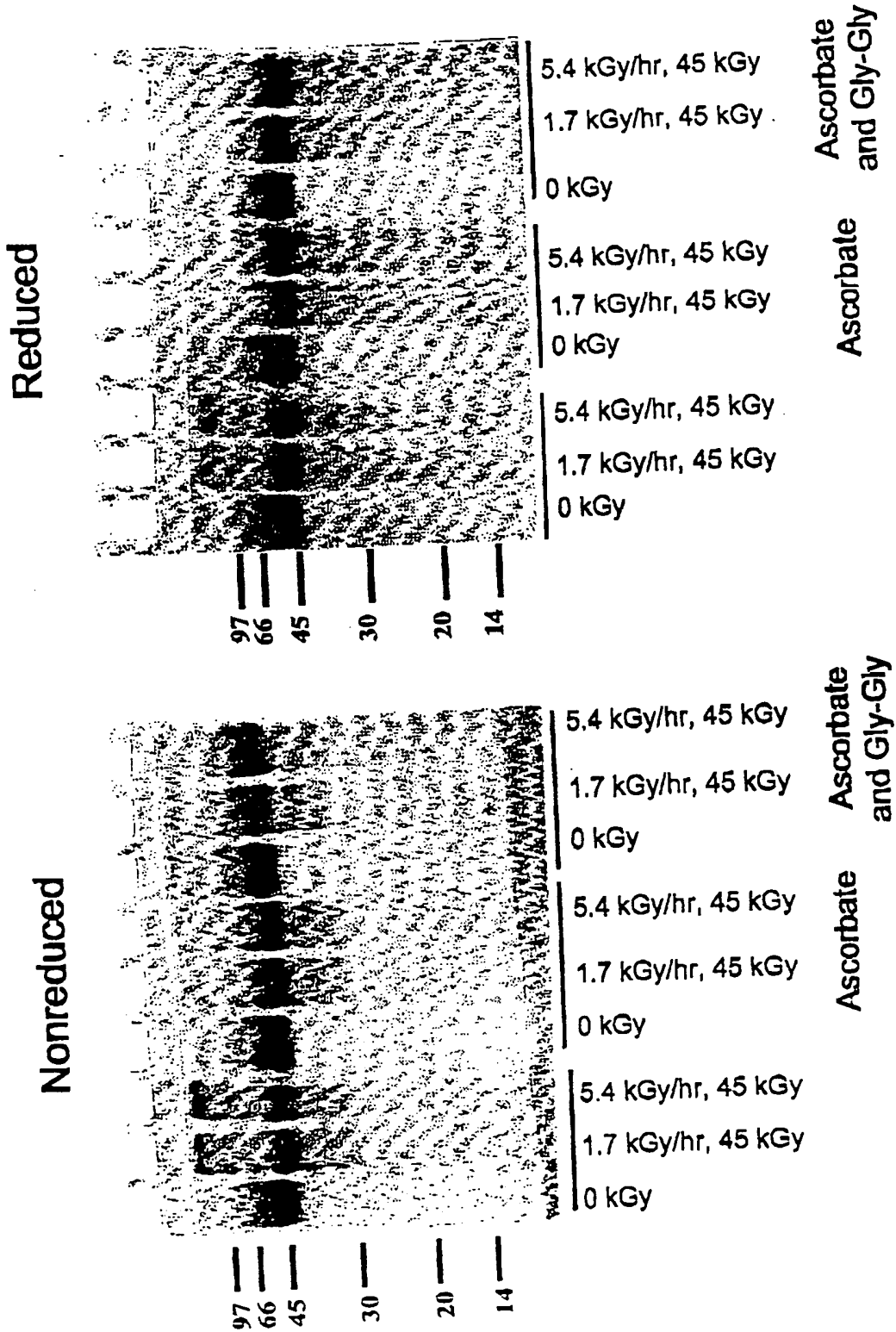
Gamma Irradiation of Trypsin in the Presence of Increasing Amounts of Added Moisture



Gamma Irradiation of Liquid Trypsin in the Presence of Increasing Concentrations of Ascorbate



SDS-PAGE for a Glycosidase

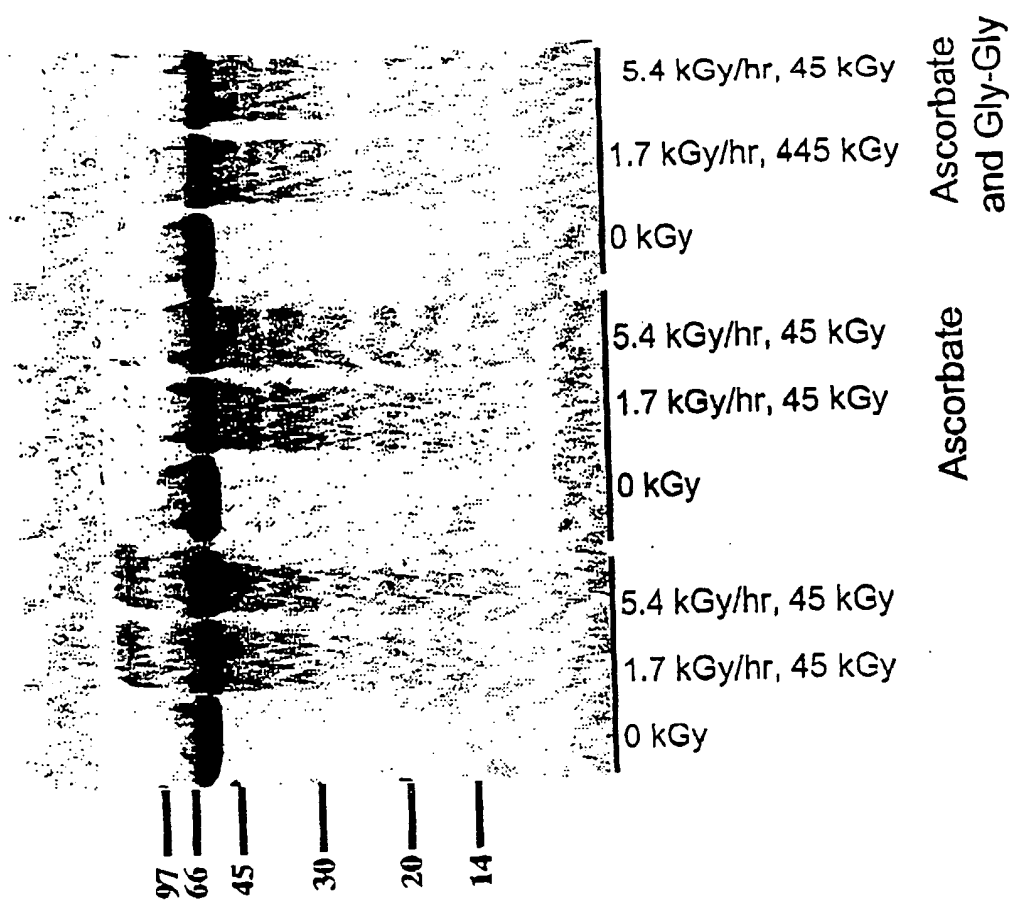


46A

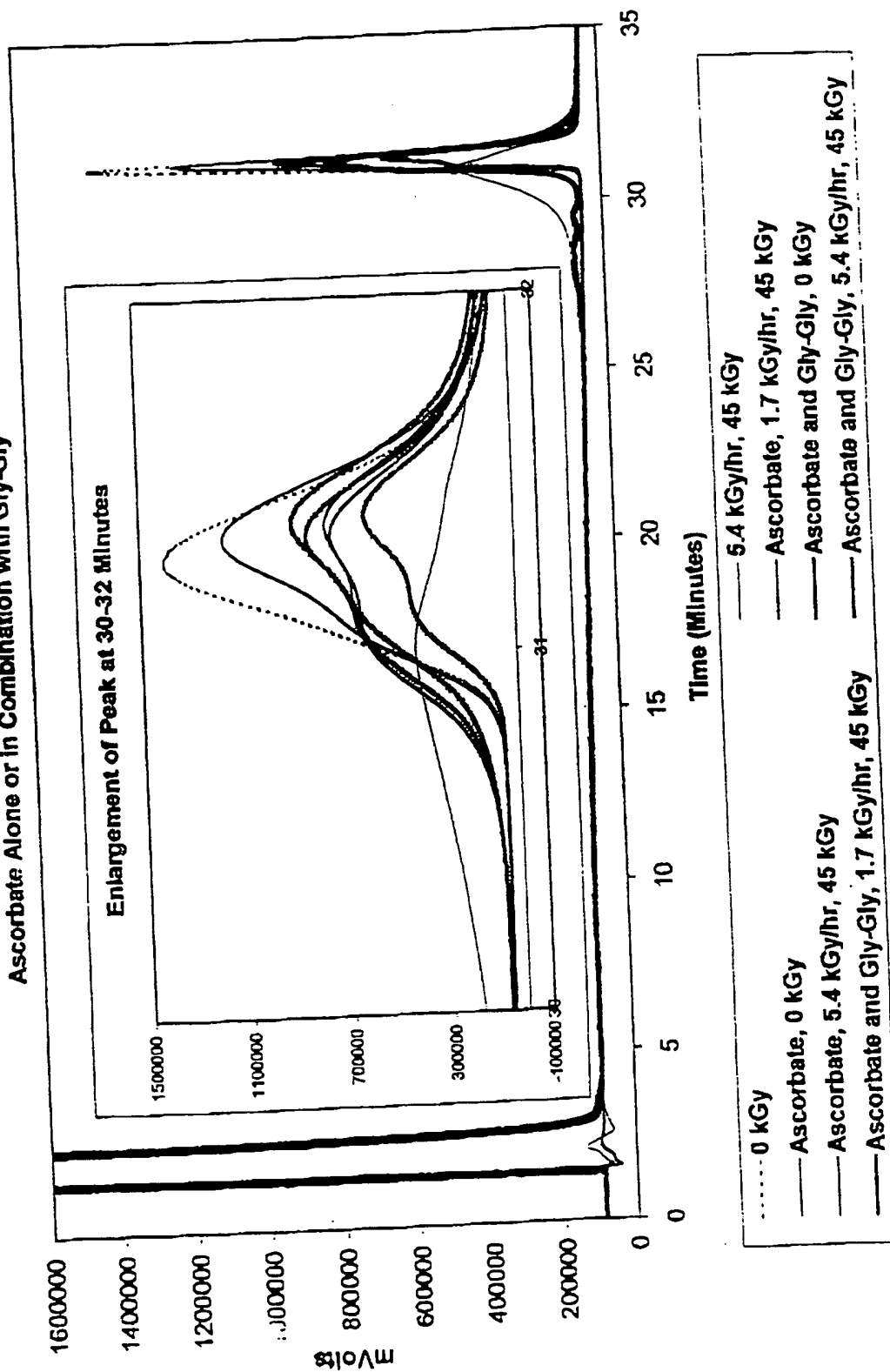
TOP-356260

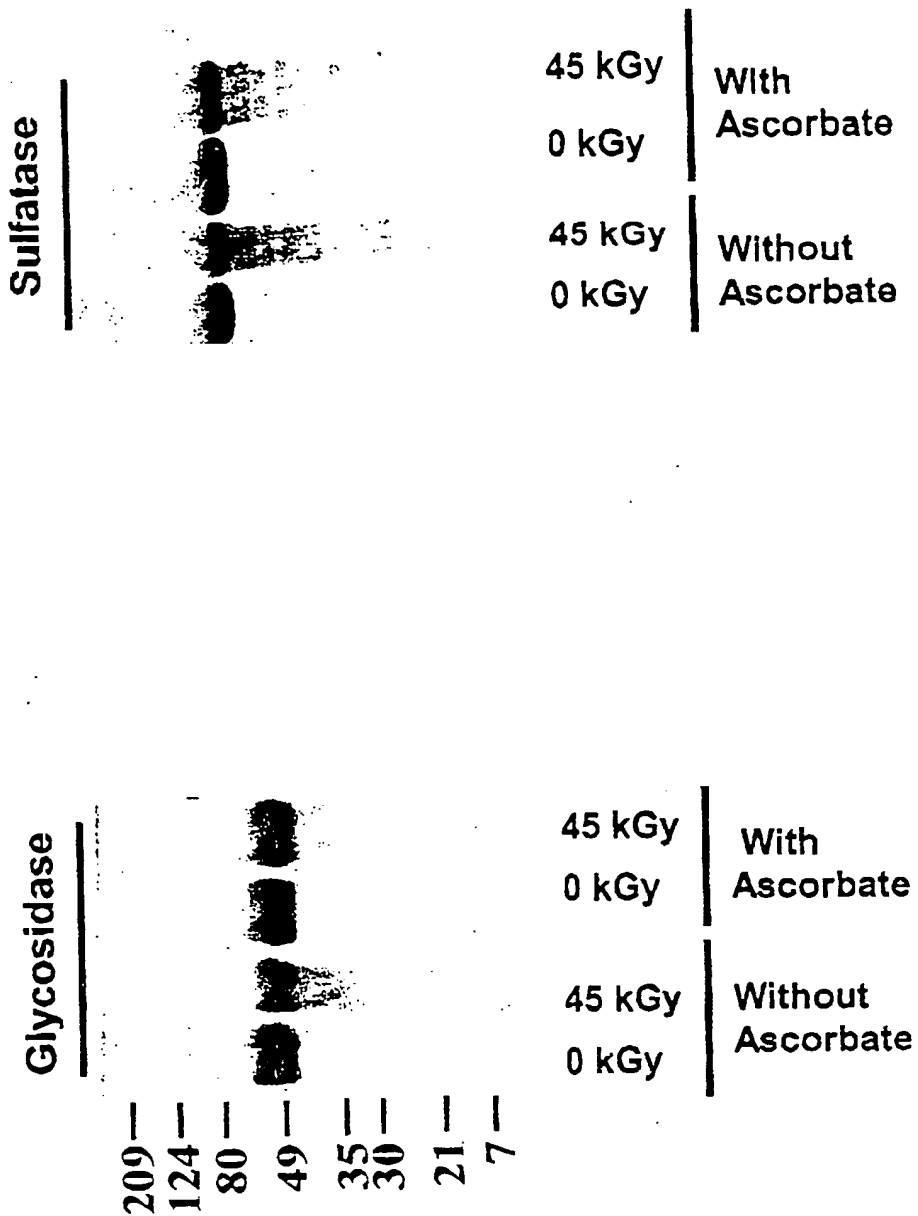
SDS-PAGE for a Sulfatase

Reduced



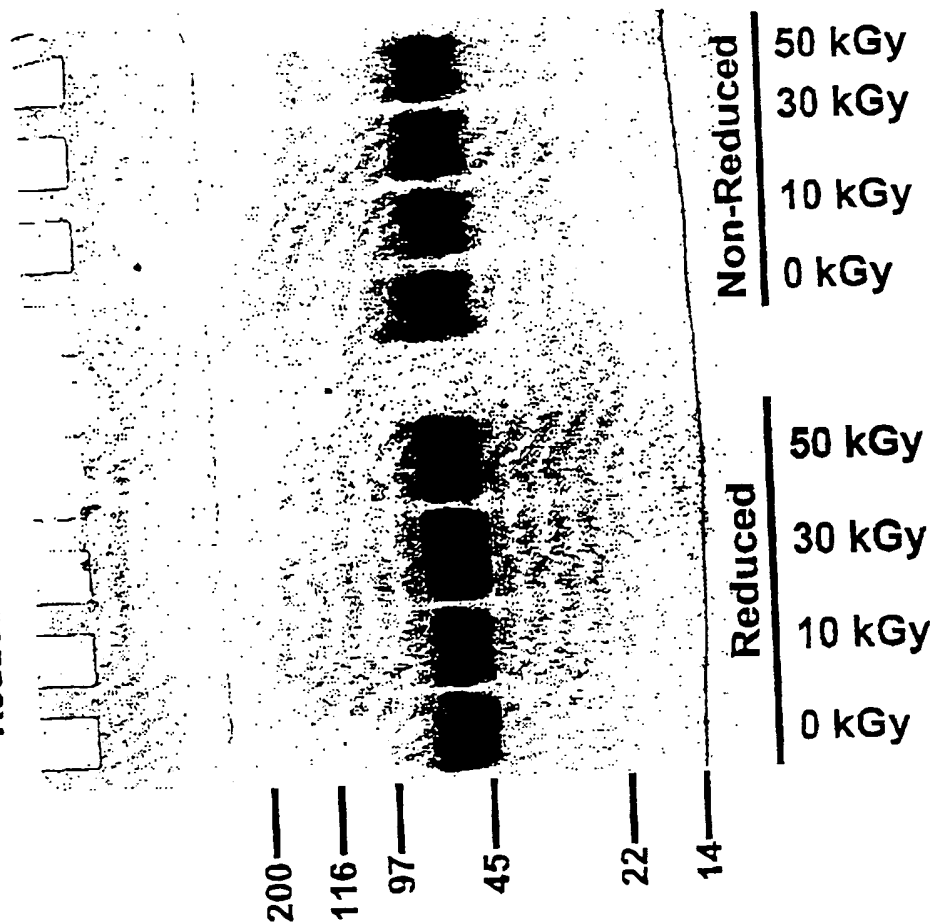
46B





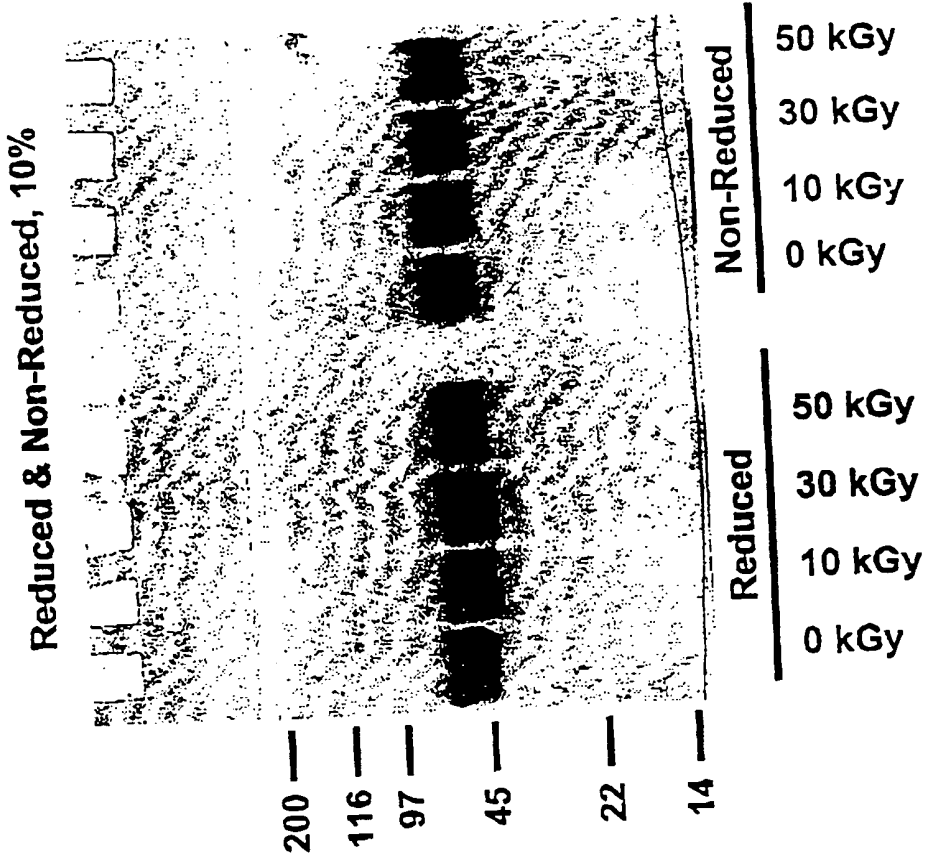
Gamma Irradiation of a Lyophilized Glycosidase In the Absence of Stabilizers

Reduced and Non-Reduced, 10%



49A

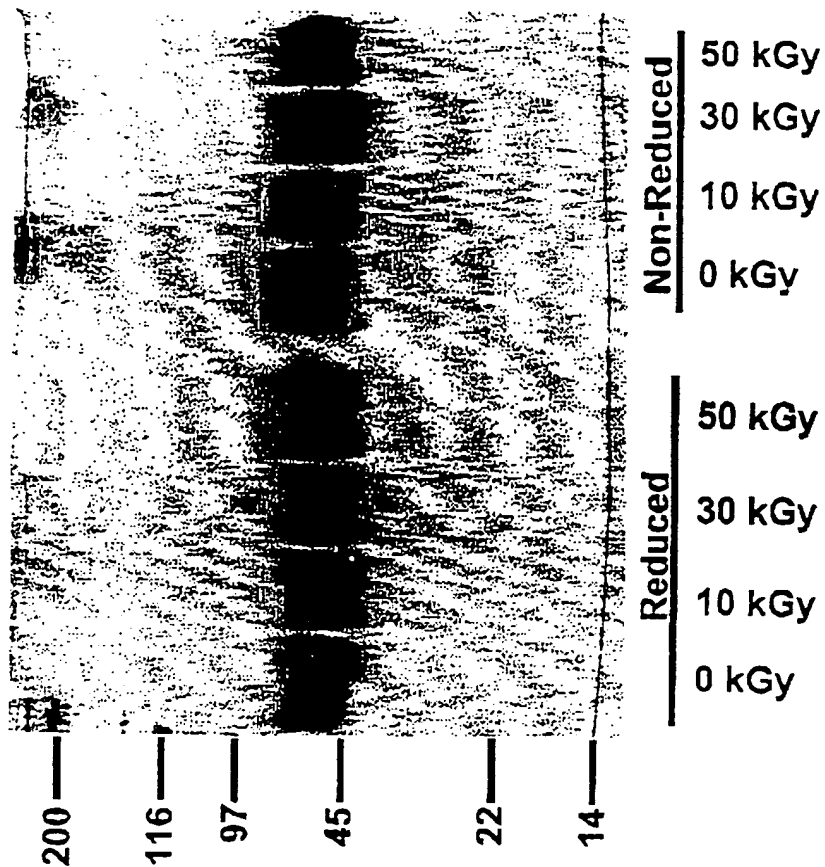
Gamma Irradiation of a Lyophilized Glycosidase In the Presence of 200mM Ascorbate



49B

Gamma Irradiation of a Lyophilized Glycosidase In the Presence of 200mM Ascorbate and 200mM Gly-Gly

Reduced & Non-Reduced, 10%



49C